

**THE RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

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### GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

### NOTICE TO SUBSCRIBERS

Consequent on paper rationing, new subscribers in Great Britain cannot be accepted until further notice. Any applications will be put on a waiting list, and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions. Orders for overseas destinations can now be accepted

### POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

### TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to Fridays 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

### ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

### ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

### Mr. Churchill on Controls and Free Enterprise

MR. WINSTON CHURCHILL'S address to the Conservative Party conference last week condemned the tendency in some quarters towards control and regimentation of industry. He declared that we had no use in this country for totalitarian schemes of Government, and that if we were to recover from the measureless exertions of the war, it could be only by a large release from the bonds and controls which war conditions had imposed. Control for control's sake was senseless, and he argued that controls under the pretext of war or its aftermath, which in fact were designed to favour the accomplishment of wayside totalitarian systems, were a fraud which should be exposed to the British public. His argument was in favour of free enterprise and the determination that the native spirit of adventure, of risk-taking in peace as in war, should bear our fortunes forward, finding profitable work and trade. He tilted at his "Socialist friends" who had committed themselves to a programme for nationalising all the means of production, distribution and exchange. These were sweeping proposals, he said, which implied not only the destruction of the whole of our system of society, and of life, and of labour, but the creation and enforcement of other systems borrowed from foreign lands and alien minds. They could be considered by the British public when it had leisure.

### Fall in Canadian Pacific Railway Net Income

The financial results of the Canadian Pacific Railway Company for the year ended December 31, 1944, were released recently. According to the preliminary statement, cabled from Montreal, the net income of the company stands at \$34,699,830 (approximately £6,940,000), a fall of \$8,282,688 (£1,676,500), due mainly to wage increases. Working expenses, including taxation, amount to \$275,711,370 (£55,142,000), as against \$247,896,224 (£49,579,000) for 1943. The total income includes \$12,371,315 (£2,474,000) ancillary revenue, comprising earnings from steamships, hotel and other properties. This revenue is down by \$3,899,436 (£780,000), but against this, special deductions are down by \$6,634,708 (£1,327,000) to \$1,321,493 (£264,300). There are also special credits for \$5,545,285 (£1,109,000) against nil in 1943, showing a net saving of \$12,179,993 (£2,436,000). After payment of the full dividend at 4 per cent. on the preference stock a final dividend is announced of 3 per cent. on the ordinary stock, making 5 per cent. for the year compared with 2 per cent. for 1943. The total ordinary dividend will absorb \$16,750,000 (£3,350,000) compared with \$6,700,000 (£1,340,000) in 1943. The carry-forward is increased by \$17,130,790 (£3,426,000) to \$241,665,008 (£48,333,000).

### British Railway Investments in Mexico

Since 1935 no interest has been paid on any British capital invested in railways in Mexico, and for many years before then the return was trifling. Nothing was paid in 1944, but in June last the directors of the Inter-oceanic Railway of Mexico announced the receipt of cable advices from Mexico to the effect that an agreement had been signed for the sale to the Mexican Government of its railway and its two associated lines, the Mexican Southern and Mexican Eastern. According to statistics published in *The South American Journal*, the total capital invested in Mexican railways and quoted on the London Stock Exchange is £77,297,632, which is a substantial proportion of the total British capital invested in that country, £137,834,190. Of this amount, £102,571,729 is unremunerated, and the total interest received is only £1,025,779, equal to 0.7 per cent.

### New Constitution for the Iron and Steel Industry

At a recent meeting of representatives of the British iron and steel industry a new constitution, designed to promote maximum efficiency, was agreed by an overwhelming majority. Accordingly an Economic Efficiency Committee is to be established as a standing body under the Executive Committee of the British Iron & Steel Federation. The new committee will be responsible for the maintenance of the technical efficiency of the industry, and it will offer advice on expansion and reconstruction schemes and, after survey of each main section of the industry, will stimulate modernisation. The Price Policy Committee of the Federation has also been reconstituted. The intention is that economically efficient plants shall govern the levels of selling prices. The guiding principles of the new constitution are: to render efficient service to the community, to retain self-government within the framework of Government policy, to develop the industry to the greatest possible extent, to maintain full

employment, wages and returns on investments, to set up an executive body truly representative of the industry and to set up machinery for planning. The Federation will be governed by a council and executive committee. The executive will consist of leaders of the industry, but the chief executive officer will be chosen from outside: he will also act as an impartial adviser to conferences and to individual firms.

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#### Newspapermen's Tribute to the Southern Railway

The Southern Railway has recently shown its readiness to help Fleet Street workers by introducing a new week-night train to West Dulwich, Sydenham Hill, Penge East, Kent House, and Beckenham Junction after midnight. Passengers living in these areas can now catch the 12.20 a.m. from Blackfriars, and change into the new train at Herne Hill. In an appreciative reference to this action of the Southern Railway, *The Newspaper World* records that for more than three years men coming off duty at 11 p.m. or midnight have had to waste time until the 1.20 a.m. train to Orpington. In response to individual letters the company decided to run the new train in May, but asked for some idea of the number of men who would use it. One of the "regulars" on the 1.15 a.m. circularised all newspaper offices and was able to inform the Southern Railway that 77 men would use the new train. The company on getting these details decided to put it into service immediately, from Monday, March 5. A telegram expressing grateful thanks of all newspapermen who will benefit has been sent to Mr. P. Nunn, London East Divisional Superintendent, who arranged the matter.

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#### Mexican Railway Sales

The Mexican Government is to purchase, for £612,870, the systems of the Inter-oceanic Railway of Mexico (Acapulco to Vera Cruz), the Mexican Eastern Railway Co. Ltd. and the Mexican Southern Railway Limited. The agreement, which is subject to ratification, provides for assumption by the Mexican Government of all liabilities and obligations of the companies, including cancellation of the debt of £3,000,000 claimed to be due for financing operating losses. The agreement also provides for abandonment by the companies of their claims in respect of the period of retention of the railways. The Inter-oceanic Railway, in consideration of the payment of £51,000 to the Vera Cruz Terminal Co. Ltd., is released from its obligations relating to the provision of port facilities. The payment is to be paid out of the sale proceeds. The Mexican Government takes over the shares, rights and interests of the Inter-oceanic Railway in the Vera Cruz Terminal Co. Ltd. After providing for liquidation expenses and compensation to the directors and staff, the joint fund available for allocation between the three companies is estimated at £606,000. The allocation provided by the scheme is 65 per cent. to the Inter-oceanic Railway, 12 per cent. to the Mexican Eastern Railway Co. Ltd., and 23 per cent. to the Mexican Southern Railway Limited.

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#### Refrigerated Transport by Rail

A survey of the efforts made by railways during recent years to develop refrigerated transport facilities was given to the Institute of Refrigeration, in a paper read recently by Mr. T. A. Eames, M.Sc., of which an abstract is given elsewhere in this issue. Mr. Eames is a member of the Research Department of the L.M.S.R., and is one of a team of workers which has carried out some notable experimental work in this direction. The paper showed three principal fields of activity: water-ice is still a most useful refrigerant, because of its cheapness and simplicity; solid carbon dioxide ("dry ice") is particularly valuable as it enables the lowest temperatures required in rail transport to be reached; finally the development of an experimental ammonia absorption refrigerator provided a matter of great interest. The last-mentioned effort shows that, technically, all the difficulties of design can be overcome, and special credit is due to Mr. H. I. Andrews, of the Engineering Section of the L.M.S.R. Research Department, for his solution of the many problems encountered. If the total weight of this van and the ammonia absorption apparatus could be reduced, there would seem to be the basis of far-reaching development in railway refrigeration, although it is undeniable that opportunities for its extended use in Great Britain are much less than in many countries abroad.

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#### All-Season Uses for Power Track Tools

Some ingenious suggestions were made recently in our American contemporary, *Railway Engineering & Maintenance*, as to the out-of-season uses to which permanent way power-driven machines and power tools can be put. A number of

these uses are connected with the handling of snow, from which North American railways suffer considerably more in the winter-time, on the average, than those in Great Britain. For example, rail-mounted air compressors used in connection with sleeper-tamping outfits can be located in winter at junctions or large marshalling yards, to be used in blowing snow from switches, or, by fitting the tamping tools with chisel-points, for breaking ice. Generators for electric sleeper-tamping tools can be used in winter to provide power for lighting, when work must be performed at night, or for operating a variety of electric tools. Weed-burners can be used to melt snow around switches, rail-brakes in marshalling yards, and elsewhere. Bulldozers, used in summer for levelling building sites, grading work, and loading cinders and other material, are useful in winter for loading snow from goods yards, station approaches, and so on; conversely the tractor snowploughs provided for dealing with snow around terminals and on station platforms can be diverted in summer to the transport of track materials, hauling refuse to dumps, and so on. Spreader-ditchers, occupied during the summer in ditching, bank welding, and so on, are equally effective in spreading heavy snowfalls off several tracks to accumulate it on one or two tracks for loading away, and can also be used as snow-ploughs on main running lines if suitably equipped.

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#### Can Passenger Traffic Pay?

An editorial in a recent issue of the *Railway Age* argued the question as to whether it will be possible to make post-war passenger traffic profitable. In the United States the Interstate Commerce Commission uses a formula for dividing operating expenses and taxes between passenger and freight-train services, in an endeavour to ascertain the profits or losses from each. By this formula, whereas the proportion of operating expenses to passenger revenue in 1925 stood at 83.5 per cent., and in 1929 at 90 per cent., by 1930 it had risen to 101 per cent., and by 1935 to 129 per cent. In these years, that is to say, passenger traffic was being operated at a loss varying from \$13,000,000 to \$161,000,000. War traffic has altered the picture completely: the last year in which a loss was reported was 1941, and in 1942 and 1943 the ratio of passenger expenses to receipts had dropped to 77.7 and 64.8 per cent., with net gains of \$596,000,000 and \$733,000,000 respectively. Taxation reduced these profits to \$301,000,000 and \$280,000,000, and it is unlikely that 1944 will show a greater net revenue from passenger service than \$265,000,000, so that once again, and largely because of the increasing burden of taxation, the tide has turned. It is calculated that after the war gross passenger revenues will need to be at least twice those of 1941, immediately before the United States became involved in war, for any net profit to be shown, in existing conditions, under the I.C.C. formula.

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#### Gravel Ballast Drainage

Much attention is paid in the United States nowadays to the condition of ballast in railway tracks, due to the realisation of the importance of efficient drainage. Previous issues of *The Railway Gazette* have described the mechanical appliances now used for cleaning rock ballast, and similar machines, known as "discers," are in use for dealing with the shoulders of track ballasted with gravel or cinders. The discer is a petrol-driven railcar with two adjustable arms extending outwards over both sides of a single track. Each arm carries, on the underside, four rotating discs, so shaped that as the car moves forward they cut into the ballast in each shoulder, so stimulating free drainage, holding down weeds, and reconditioning the shoulder section generally. On the first pass, the ballast is turned over and outward from 3 to 4 in. beyond the sleeper-ends to a distance about 2 ft. away, and down to a level from 2 to 4 in. below the underside of the sleepers, sloping away from the track. The second pass is usually made in the opposite direction, and throws the ballast back towards the sleepers, at the same time cutting a toe line about 5 ft. away from the rail. In the final pass a shaper blade is dragged after the discs to dress the shoulder ballast back to the standard contour. A common practice is to make the first pass in the spring, ahead of the sleeper renewal period, so facilitating the removal of the sleepers that are to be replaced, and then to follow up with the second pass after the sleeper renewals are complete. A light additional pass may be made in the autumn to improve winter drainage.

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#### Swindon Locomotive Developments during 45 Years

In connection with the recent retirement of Mr. S. J. Smith (of whom a portrait and biography appear on another page) from the position of Chief Draughtsman to the Chief Mechanical Engineer, Swindon, Great Western Railway, it is worthy of note that his career with the G.W.R., which began in 1899, covered



the most important phase, technically, in its locomotive development. Immediately after Mr. Churchward's appointment as Locomotive Superintendent (later Chief Mechanical Engineer) in 1902, the revolutionary policy in respect of front-end design was put into practice. Under Mr. Churchward's leadership, one type of locomotive after another passed through the design and constructional stages, and so into service. Shortly after the early 4-6-0s and 2-8-0s there appeared Atlantics (the latter built shortly after the purchase of the French compounds); then came the "County," 4-4-0s and the first four-cylinder engines, and, in 1908, *The Great Bear*, the first Pacific in this country. Concurrently, several noteworthy designs of tank engines were produced, usually so arranged as to form compact versions of corresponding tender locomotives. Throughout Mr. Collett's time steady progress was made, and in 1932 (when Mr. Smith became Chief Draughtsman) the G.W.R. inaugurated a schedule for the "Cheltenham Flyer" which compelled the attention of the entire railway world. Mr. Smith has been succeeded by Mr. F. C. Mattingly, previously Assistant to the Chief Draughtsman.

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### Post-War Organisation of Docks and Harbours

IN their speeches at the recent annual general meetings, the railway Chairmen stated that since the railways had become members of the Dock & Harbour Authorities' Association, they had participated in the formulation of proposals relating to the post-war organisation of docks and harbours which had been approved by the association and submitted to the Minister of War Transport. This matter had its origin in a letter addressed by the Minister of War Transport to the association on November 10, 1943, in which he said that if the association had formulated any post-war proposals, he would be glad to consider them and that, as the railways had recently joined the association the views expressed would doubtless cover both non-railway and railway-owned ports. The association set up a special committee to formulate proposals, and these were adopted by the association at a special general meeting on February 14, 1944. They were subsequently submitted to the Minister and have now been published.

The report commences by pointing out that there are approximately 330 separate ports in the United Kingdom and that the constitutional powers and duties of the numerous port authorities vary very considerably. In considering the post-war organisation of these port authorities a number of major questions would arise, such as whether it is desirable in the public interest that the present large number of separate authorities should be reduced and, if so, whether this should be accomplished by (a) encouraging and facilitating voluntary amalgamation, or (b) by compulsory amalgamation. A further consideration is whether one body only should own the public docks, quays and wharves and whether the same body also should be responsible for conservancy, lighting and buoying duties. In considering what, if any, advantages would accrue by amalgamating some of the ports which serve overseas or coastwise shipping, the association feels it is necessary to bear in mind the three main categories of service to shipping which must be provided at every port, namely:—

- (i) The provision and maintenance of a safe and convenient waterway between the open sea and the point of loading and discharging.
- (ii) The provision of safe and suitable docks, quays and wharves for loading and discharging cargo, and for embarking and disembarking passengers.
- (iii) The provision of facilities and appliances for special purposes.

It suggests that although at one particular group of ports it might be felt that all these services could be provided more efficiently or more economically to the benefit of commerce or the general public by the establishment for those ports of a single authority, it might be preferable not to make a similar alteration in regard to other groups of ports. It considers that no fast or rigid formula can be applied universally and that the circumstances existing at the several ports or groups of ports must first be examined by the ports concerned before any definite conclusions can be reached.

The association feels, however, that it would be a great advantage to ports in general if some machinery were devised, first, to enable the Minister of War Transport to seek advice on proposals for re-organisation, development and administration and, secondly, to enable similar schemes initiated by the port authorities themselves to be set on foot. It, therefore, recommends that an advisory body to be called "The Docks & Harbours

Advisory Council" should be established. It recommends that the council be constituted for the purpose of giving advice and assistance to the Minister of War Transport in relation to questions concerning dock, harbour and conservancy authorities and possibly pilotage authorities, and suggests that it should consist of 13 members to be appointed by the Minister, comprised of a Chairman; six members representing dock, harbour and conservancy authorities, appointed after consultation with the Dock & Harbour Authorities' Association, and six members representing payers of rates, dues, charges and labour at ports and municipal and local authorities, appointed after consultation with the General Council of Shipping, the Association of British Chambers of Commerce, the Association of Municipal Corporations, and the Scottish Convention of Royal Burghs, and such organisations representative of labour as the Minister thinks best qualified to advise him upon the matter.

It suggests that the duties of the council shall be to examine and report to the Minister on—

- (1) Any proposals which may be submitted to the council by the Minister.
- (2) Any proposals which may be submitted by two or more dock, harbour or conservancy authorities relating to the amalgamation, co-ordination, improvement or development of the undertakings of the several authorities so submitting the proposals.
- (3) Any matters affecting dock, harbour, conservancy or cognate authorities which may be submitted to the council for its advice and report by the Dock & Harbour Authorities' Association on behalf of such authorities, or by any group or groups of such authorities in relation to particular undertakings in that group or those groups.
- (4) Any proposals which may be submitted to the council of any chamber of commerce or shipping, or by any other association interested in the trade of the United Kingdom which obtains a certificate from the Board of Trade that it is a proper body to make such proposals relating to:—
  - (i) the amalgamation or co-ordination of any dock, harbour, conservancy or cognate authorities;
  - (ii) the provision, improvement and development of facilities for loading, unloading or warehousing goods at ports.

It is proposed that the council should give notice to any authority in respect of which any proposals relating to its undertaking have been submitted to the council, and permit a representative of such authority to attend meetings of the council at which such proposals are examined and have a proper opportunity to represent his case. Also, that every report made by the council on any proposals or matters submitted to it shall be made to the Minister and a copy sent by the council to the body by which submission was made and to any body or bodies affected thereby. It is understood that the views of the Minister on these proposals have not yet been communicated to the association.

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### The £40,000,000 London Railway Scheme

WITH the likelihood that the war in Europe is drawing to its close, the London Passenger Transport Board, in conjunction with the main-line railway companies, has reviewed the immediate post-war requirements in the London Passenger Transport Area with particular regard to the suspended works included in the New Works Programme, 1935-40. We made reference to this in an editorial article last week, and also to the possible modifications which may be required by various planning schemes that are under consideration, and recorded the establishment of the Railway (London Plan) Committee. Meanwhile, it is interesting to note that the accounts of the London Passenger Transport Board for the year ended December 31, 1944, contain a footnote under the table of capital powers indicating the current financial position of the £40,000,000 scheme. It may be recalled, that, under the Agreement dated July 11, 1935, between the London Passenger Transport Board, the Great Western Railway Company, the London & North Eastern Railway Company, and the London Electric Transport Finance Corporation Limited, implementing the arrangement with H.M. Treasury, London Transport undertook, subject to obtaining such further Statutory powers as were necessary: (a) to borrow from the London Electric Transport Finance Corporation Limited up to 70 per cent. (or such other proportion as may be agreed) of a total sum not exceeding £40,000,000, a due proportion of the discount on the issue of Finance Corporation securities to be added to the

sums borrowed on repayment; (b) if so required by the Finance Corporation, to create London Transport stocks of a nominal amount equal to the sums borrowed, including a proportion of the discount on the issue of Finance Corporation securities, and to charge such stocks as collateral security for the borrowings; and (c) to keep its borrowing powers under Acts subsequent to the London Passenger Transport Act, 1933, unexercised to an extent necessary to meet its obligations under (b). The Finance Corporation has issued securities of a nominal value of £41,650,000 at discounts amounting to £1,683,750. London Transport has borrowed £29,154,341, including £1,178,598 in respect of discount, up to December 31, 1944, which sum will become repayable, in accordance with the terms of the agreement, not earlier than July 31, 1950, or later than July 31, 1955.

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### British Air Transport

BRITISH civil aviation has had a somewhat chequered career and the subject, in the past, has given rise to considerable controversy. The Government's plan, therefore, is admittedly a compromise, but this was inevitable in view of the many complications and difficult issues inherent in the problem. For this reason the Minister for Civil Aviation is entitled to feel considerable gratification at the generally good reception which has been accorded the broad principles of his proposals. Detailed criticism may follow later as to particular aspects of the plan, but in its broad conception it provides a scheme for combining experience and enterprise, together with the possible stimulus of competition between the three corporations. Regret has been expressed in some quarters that more scope is not left to free competition, but it would be difficult to permit this and secure the satisfactory operation of services which are essential but which would be likely to yield little profit.

The railway companies are also entitled to feel some gratification in learning that the Government has so completely accepted (a) their view that, in the interests of economy and efficiency, internal and Continental air services should be operated by the same organisation, and (b) the reasons for their inclusion in the corporation to be formed to operate these services. There are, of course, certain important differences between the railway proposals and the Government plan. The railways offered, in co-operation with the short-sea shipping lines and independent companies which were conducting air services before the war, to conduct without subsidy all the internal and external Continental air services the Government might require operated. The Government accepts this proposal with the important modification that B.O.A.C. must participate, a stipulation which the railways welcome. Further, the railways asked for no sort of monopoly or subsidy in their services but merely for a "fair field and no favour." The Government, however, proposes an extremely limited form of monopoly for the new corporation which, incidentally, will benefit not only the railways but the shipping and independent air companies and travel agencies who participate in the new corporation.

The White Paper deals only with broad principles and no information has yet been forthcoming as to the extent to which the various constituent members of the main corporations will participate in their capital structure, or of the extent to which they will be represented on the boards. Further details, however, may be disclosed in the House of Commons debate which it is proposed should be held after this issue goes to press. In the course of a debate in the House of Lords on March 15, Lord Knollys (Chairman of B.O.A.C.) welcomed the participation of other organisations in the development of civil aviation and assured the House that it would be the determination of all the parties concerned, air, railways and shipping, to build in friendly and constructive competition a system of British air connections which would be worthy of our best traditions. Lord Kennet warmly welcomed the proposals on behalf of the railway companies as providing a real partnership between Government and free enterprise, and intimated that they were not only prepared to find all the capital which the Government required but accepted the requirement that they, in common with the other interests concerned, should not be allowed to transfer any share of the capital in the new Corporation which they are allotted.

Lord Swinton informed the House that he had received more ingenious ideas about cheap air travel from the railway companies than from anybody else and stated that it was at their suggestion that the great travel agencies were included in the scheme. He mentioned that the railways would not have a

majority in shareholdings or on the board of the European company, but declined to be at all definite as to the composition of the boards on the ground that Parliament should have an opportunity of debating the plan before such detailed action was taken. He intimated, however, that it was in his mind to appoint to the board two or three independent persons not connected with any shareholding interest. On the subject of pre-war operators he explained that full opportunity would be accorded them of joining the main corporation and/or joining a subsidiary company in which they and the main corporation would participate. As to the kind and functions of the independent tribunal which it is proposed to set up, the Government had not taken any firm decision, but his view was that, like the Railway & Canal Commission, it should deal with facilities, fares, and so forth, and applications for new routes, and possibly act as the licensing authority.

He also made it clear that while it was proposed that the Minister should appoint or approve the members of the boards of the operating companies, he could not dismiss them during their term of office. It was the intention of the Government that the management of the companies would be the responsibility of the boards and could not be questioned in Parliament. He outlined in some detail the grounds upon which the Government proposed to decline to make any payment for good-will or development costs in connection with any undertakings which became members of the proposed main or subsidiary companies. He expected that the Government would announce shortly the schedules of assigned routes which it hoped to see run as soon as war conditions permitted and aircraft were available. So far as aircraft are concerned, he forecast that a "trickle of production" would start in June and a flow next year of Tudor I, an Avro trans-Atlantic four-engined liner; Tudor II, another Avro four-engined liner intended to be pressurised for sub-stratosphere work, would be put into production in November and a few should follow early next year, and V.C.1 (a Vickers twin-engined general-purpose air transport based on the Wellington bomber) would begin production early next year and would get into its stride towards the middle of the year.

Dealing with the desirability of having a common maintenance, repair and overhaul organisation to which all three corporations would subscribe, he paid an unsolicited testimonial to the magnificent job which the railway companies had accomplished in repairing aircraft during the war, mentioning incidentally that the Minister of Aircraft Production had informed him that the repair of Lancaster bombers by the L.M.S.R. was one of the best repair jobs of the whole war. Finally, he claimed that the proposals would enable British civil aviation, which has had to be subordinated to the supreme war effort, to take its rightful place on the airways of the world.

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### Hybrid Bridges on the Italian Front

UNLIKE the bridge over the Voltorno River near Canello, which, as described in our issue of January 19 last, was reconstructed by British R.E.s. with standard British military bridging material, the bridge over the same river near Capua was rebuilt by U.S. troops with captured German girder steelwork—of the Roth Wagner type—and with British standard military trestling for the only new pier required. The original bridge had consisted of seven double-line spans on masonry piers and abutments and was 525 ft. in overall length. The whole of the steelwork, both abutments, and three of the six piers were completely demolished. The Americans replaced it with a single-line structure 532 ft. long—so that the ends rested on the embankments behind the old abutments—consisting of one 80-ft. and three 150-ft. spans, these spans suiting the remaining piers and being the quickest to erect. From the north bank one 150-ft. and the 80-ft. span were launched by rolling out over the two masonry piers that happened to be nearest the north abutment, to form bridge spans Nos. 4 and 5, the outer end of the 150-ft. span, No. 4, finally resting on the trestle pier in mid stream. Meanwhile the other two 150-ft. spans were erected, one on the south bank and the other as a cantilever—using the one on the shore as a counterweight—across the gap to the third remaining masonry pier, 150 ft. out in the stream, to form bridge span No. 1. The span on the shore was then dismantled and re-erected as span No. 2 between this pier and the trestle pier, using span No. 1 as counterbalance. The new bridge was completed within 22 days.

The original bridge over the Garigliano River consisted of one



double-line 236-ft. through truss span, but the Germans left neither steelwork nor abutments undismantled. The U.S. Railway Troops again used Roth Wagner captured steelwork to rebuild this bridge as a 240-ft. single-line through truss span. For spans of over 150 ft., the Roth Wagner trusses have to be used in two tiers—as in the Bailey road bridge, described in our issue of December 22 last—with overhead lateral bracing. As there was little more than enough steelwork available for this large span, cantilever erection without intermediate supports was impossible. The use of ordinary piling was impracticable, and so British steel trestling with camel's feet—described in "Standard Military Railway Bridges—I," in our issue of March 2—was used for the two temporary piers. The parts of the trestling that would be submerged—the water was 22 ft. deep—were floated out between two barges, lowered on to the bed, and adjusted to plumb by means of the screw mechanism. Girder erection had to be carried out from the south shore only, but in order to construct a new south abutment and erect the span simultaneously, special steel columns, fabricated from locally-salvaged material, were erected on the foundation of the destroyed abutment to carry the load of the steelwork during girder erection while the abutment concrete was setting. The bridge was thus completed and ready for traffic within 14 days.

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### Experience with Travel Permits

**D**URING the present war every large country in the world has been faced with the problem of far more traffic offering than its facilities enable it to handle. In part, this is a result of substantial increases in the volume of traffic, accentuated by the fact that shortages of motor fuel and rubber tyres have reduced road transport to the minimum. Except for troop movements, freight traffic has naturally been given preference, and with this it is possible to establish a satisfactory system of priorities. Ordinary long-distance passenger traffic must of necessity take a subordinate place in war conditions, but this does not mean that long-distance rail journeys are unnecessary for vast numbers of persons. In most countries, endeavours have been made to restrict passenger travel by rail, by appeals to patriotism to reduce unnecessary journeys, and by the withdrawal of any travel amenities which might make journeys attractive in themselves. The success which has attended such efforts has been, and continues to be, variable.

Great Britain and the U.S.A. have not found it practicable to proceed further than this, as the difficulties of selection, and the clerical labour involved, are regarded as disproportionate to any advantage which might be achieved by a system of issuing travel permits. On the other hand, New Zealand (and Australia for interstate travel) and Germany have introduced travel permit systems for longer-distance travel, involving the exercise of judgment by some authority on the question of whether a particular journey is permissible, with the obvious limitations that it is impracticable to assure uniformity of judgment in the grant of a permit, or honesty and accuracy on the part of the applicant. The issue of travel permits in Great Britain has been considered very carefully, and until now rejected, but the magnitude of the problems with which British railways are likely to be faced during the coming summer is such that topical interest attaches to the restrictions on passenger travel which the New Zealand Government Railways imposed and later found it desirable to abolish after lengthy experience and in the changed conditions then prevailing.

The first restrictions in New Zealand had to be imposed during the Christmas and New Year holidays in 1941 on account of the mobilisation of Forces on the outbreak of war in the Pacific and of the heavy demands of military leave. Until January 6, 1942, ordinary express trains only were operated, in addition to the troop trains required; all relief express trains and excursion trains running for distances exceeding 100 miles were cancelled. During the Easter period of 1942 passengers were permitted to reserve seats up to the limit of the accommodation available, but no extra express or passenger trains were scheduled, though additional trains were operated for purely military purposes. On July 27, 1942, as a result of heavy military demands, a permit system was introduced on the North Island system, and passengers intending to make journeys exceeding 100 miles

in length were required to state the need for their journeys in order to obtain the necessary permit. By September 4, 1942, in consequence of difficulties with coal production, severe train-service curtailments were made, and the system of travel permits was extended to cover all journeys exceeding 50 miles; on October 4 it was found possible to relax this by reverting to the 100-mile limit.

No extra passenger trains (other than for troops on leave) were worked during the Christmas and New Year period of 1942-43. On January 12, 1943, the permit system was cancelled, although the travelling public was informed that the accommodation available on long-distance trains on the North Island system would be limited by military demands. For the Easter holiday period in 1943 no permits were necessary, but it proved impossible to provide additional express trains between Wellington and Auckland, and all passengers were required to reserve a seat for journeys of over 50 miles. During the Christmas period that year, besides providing for the necessary leave requirements of the Forces, the New Zealand Railways were able to schedule certain extra trains. In January, 1944, however, the coal situation again became so acute as to cause a drastic curtailment of train services, and the permit system was re-introduced on both the North and South Island systems for all journeys exceeding 50 miles. One of the permit forms is reproduced. An early result was that secondary trains did not carry anything approaching their quota of passengers, and, in addition,

<b>N. Z. R.</b>	No. _____
Station. _____	
Date : _____, 194	
<b>PERMIT FOR RAILWAY JOURNEY.</b>	
On presentation of this permit, together with the requisite passenger ticket, the bearer, _____	
may be permitted to travel by train from _____	
to _____, on or before _____, 194	
(Date.) _____ Stationmaster.	
<small>This permit, and any ticket issued hereon, carries no undertaking on the part of the Department to convey the holder by any particular train or on any particular date. Any ticket issued to the holder of this permit is issued subject to there being room on the train. This permit must be presented without alteration or erasure thereon, and must be given up on demand.</small>	

a considerable amount of trouble was caused through intended passengers reserving seats and then not travelling.

It was decided, therefore, to abolish the permit system for secondary trains, so as to enable the best possible use to be made of the passenger accommodation available. To cope with the non-occupation of reserved seats, a system of fines was established, applicable to those passengers who had reserved seats on express trains but did not occupy the seat and failed to cancel the reservation. The withdrawal of the application of the permit system to secondary trains, and the consequent experience gained from allowing unrestricted travel on these trains, enabled a comparison to be made of the advantages and disadvantages of the practice. After full consideration had been given to the question, it was determined, at the end of August, 1944, to abolish the travel permit system entirely as from September 6, 1944, from which date reliance was placed on the train services available and the seat reservation system to govern the extent of travel. Passengers are permitted to reserve seats up to one week ahead of the day of travel, and, to meet cases of emergency, a certain number of seats is held in reserve until two hours before the departure time of the train. Broadcasting is used to give daily announcements of the accommodation available, and notices are displayed indicating the principal trains on which accommodation is fully booked, thus reducing as far as possible unnecessary waiting in queues for seat reservations. It is worthy of note that the reservation of seats is found desirable, as it was in France during the German occupation, and this probably provides the most practicable control of passenger travel, with the restricted clerical labour available, if trains of fixed accommodation are run, and there is no duplication.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

## Engine Driving Without Tears

P.O. Box 546, Haifa, Palestine,  
February 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Further to my letter of November 12 last, published in your December 1 issue, the exceptional project of turning out as firemen, at the appropriate basic wage, young men of 17 and upwards, without prior railway experience, after six months' technical and practical training in the Palestine Railways' Locomotive School may have held little further practical interest for readers on realising that it had not succeeded in its primary essential, namely, its ability to attract any suitable candidates. For others, however, the remarkable general effect recorded within five months of the actual opening of the locomotive school, in August, 1944, some nine months after the original scheme had had to be abandoned, may have further interest.

This time, the lectures were to be attended by drivers and firemen, in reversion to the more general principle which had been followed since the inception of the railway; the course was to last three weeks in lieu of the six months which had been planned.

On January 5 of this year under the heading "Railway Training in Haifa," *The Palestine Post* wrote: "The experiment of a traffic training school and a locomotive school begun at Haifa a year ago has proved worth while and is already paying dividends in the form of higher efficiency of personnel and better service by engine-drivers. . . . There is a communal dining-hall where three meals a day are served."

Two days later, on January 7, *The Palestine Post* printed another article, entitled "Jacking Up the Railway" in which appeared: "Higher efficiency and improved service are the watchwords under which the Palestine Railways is gradually putting into effect a number of schemes to overcome the stagnancy which had prevailed for so many years. . . . Experts and additional staff have been brought from England, South Africa, Uganda, and Iraq," and once again appears the point which has impressed the paper so much: "Traffic training and locomotive schools, with a hostel inaugurated, are beginning to pay dividends in the form of better service from personnel."

Has the newspaper with vision unimpaired by a wealth of technical detail put its finger on what has made all the difference which can have accounted for the school paying "dividends" in five months. Was it the hostel? All else was fundamentally as before. Despite the influx of experts from many lands, the Palestinian instructors charged entirely with this vital task were those responsible for periodically imparting similar instruction for the past quarter of a century. There seems but one logical conclusion, which is that the up main

line from "Stagnancy" to "Dividends" passes bang through the middle of "the communal dining hall where three meals a day are served."

Yours faithfully,

A. L. JONES

## Power-Operated Doors for Rolling Stock

Westminster, S.W.1

March 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—One of the most interesting points which arose in the discussion on Mr. A. F. Collins's recent paper before the Institution of Locomotive Engineers was that raised by Mr. W. A. Agnew, who reminded the audience that as early as 1905 the District Railway introduced the pioneer example of air-operated doors in this country. A small engine, he said, was fitted on the top of each door, worked by compressed air from the braking system. Some 400 cars were so fitted. A gateman between each pair of carriages controlled the valves which admitted air to the engines. The gatemen could not see clearly when to close the doors; the scheme lasted only some eighteen months.

A tribute is certainly due to the District Railway for this notable experiment, which is not nearly so well known as it should be. In reflecting on it, I wondered why even that progressive little company should have waited until electrifying its stock before it began its experiments with air-operated doors. After all, the District was one of the select band of British companies which adopted the Westinghouse brake, and the power with which to operate carriage doors had been available many years before 1905. Is there any record, I wonder, of the Great Eastern Railway (for instance) ever having considered the possibility of a radically different type of vehicle for suburban work, something on the lines of the District stock, with air-operated doors for quick loading?

There is, as far as I can see, no overriding necessity for air-operated doors to be confined to electric lines, although the electro-pneumatic control undoubtedly saves a little time in operation. Surely a system of compressed-air operated doors could be included in any projected design for the post-war construction programme for the Great Eastern section of the L.N.E.R. It is not too late for so important a matter to receive due consideration.

Objections might be raised, I suppose, to the use of the "open" type of car suggested, especially on semi-suburban runs of around 20-30 miles. My own experience is that as long as it remains the fashion for everyone to begin work (and also to leave off) at much the same times, overcrowding will be inevitable, and so everybody cannot expect to get a seat. If, therefore, I must stand, I would much rather stand in a "District" type of coach than in one of the separate compartment type, and I think most other travellers would agree with me.

Yours faithfully,

OMFGA

## Publications Received

**Rolling Bearings: A Comprehensive Treatise Covering History, Theory, Design, and the Practical Application and Use of Ball and Roller Bearings.**

By R. K. Allan. London: Sir Isaac Pitman & Sons Ltd., 39/41, Parker Street, Kingsway, W.C.2. 8½ in. × 5½ in. 401 pp. Price 30s. net.—The importance of ball and roller bearings in modern engineering has been emphasised repeatedly during the war, when bearing factories have ranked high in the priority list as targets for bombing. As its sub-title suggests, this book covers comprehensively the whole range of ball and roller bearing practice. An unusual feature, for this type of technical work, is the opening historical section. This is interesting, well illustrated and covers a period from 3000 B.C. to A.D. 1940. Apparently roller bearings are not as new as might be supposed. The problems associated with sliding and rolling friction are dealt with fully, together with the theoretical and practical aspects of ball and roller-bearing design. A section is devoted to bearing materials and methods of manufacture. Other sections cover bearing endurance, dimensional standards, lubrication, working tolerances and performance. Considerable space is given, justifiably, to practical considerations of

fitting, maintenance and repairs. The design of typical and unusual bearings and their application is discussed fully. The book includes a comprehensive bibliography and index, together with a considerable number of useful charts and tables.

**"ON": Some Irresponsible Jottings, Scientific and Otherwise.** London: Associated Electrical Industries Limited, Crown House, Aldwych, W.C.2. 7 in. by 5 in. 164 pp. Price 5s. net.—This little volume provides reading that is both amusing and interesting. The author has not only a keen sense of humour but a wide knowledge of scientific subjects which he sets out in an admirably simple manner. The contents of this book have appeared monthly in the *A.E.I. News*, the house magazine of Associated Electrical Industries Limited.

**Wade's Tables (Pole Strengths).** Revised edition, 1944. 27 pages, with blank extras for notes, 7½ in. × 4½ in. Obtainable, price 5s., from Gabriel Wade & English Limited, Staddlethorpe, Giberdyke, Brough, E. Yorks., or 17, Shakespeare Road, Bedford.—These tables have been well known for many years and the present abridged pocket edition has been brought out as the earlier ones are now practically unobtainable. It gives the

principal figures covering weights, elastic deflection, wind pressure, breaking load, net safe load, etc., for various types of wooden poles used in overhead electrical transmission work, together with certain other supplementary information useful to the engineer. It is pointed out that the use of wooden poles, rendered increasingly necessary during the war, is likely to become much more general, as such form of construction is now recognised as offering advantages. Although primarily intended to cover power-transmission line work, the tables will be of considerable value to signal and telegraph engineers, who can readily make such allowances, when calculating from the data given, as their own particular circumstances may render advisable.

**Bakelite Resins.**—We have received from Bakelite Limited a revised illustrated booklet in which a description is given of bakelite resins, cements and lacquers, which normally are grouped together because of their general similarity, and because, to a certain extent, their functions overlap. They are all based on bakelite resinoids which are produced by the chemical reaction of phenols and aldehydes. A few of the many uses of bakelite resinoids is given in this booklet, copies of which may be obtained on application to Bakelite Limited, 16, Grosvenor Gardens, London, S.W.1.



## The Scrap Heap

"In the view of one official, the lot of rail passengers will be improved by leaps and bounds. To say nothing of pushing and shoving."—From "Charivaria" in "Punch"

### HISTORIC INDIAN WAGON-BUILDERS NAMEPLATES

The accompanying illustration shows a collection of wagon-builders nameplates removed from a variety of broadgauge wagons scrapped at different times in the Moghalpura shops of the Indian North Western Railway; these name-plates are now preserved in the office of the carriage & Wagon Works Manager.

The plates of the private building firms need no explanation, but those denoting construction in railway workshops are as follows:—

Top left-hand circular plate; Lucknow shops, Oudh & Rohilkhand (State) Railway, now a part of the East Indian system. Lucknow was the headquarters of the O. & R.R.

"I.V. State Railway"; the Indus Valley line formed a link between Kotri, on the Scinde Railway from Karachi, and Mooltan, on the Umrtsur-Mooltan Railway (note the old spelling). It ran up the right bank of the Indus to Sukkur, where there was a wagon-ferry prior to the opening of the Lansdowne cantilever bridge in 1889, and then continued up the left bank of the river—the present N.W.R. main line—to Multan. At Ruk, near Sukkur, the I.V.S.R. was joined by the Kandahar State Railway, now the Ruk-Sibi section of the line to Quetta, and continued beyond Sibi as the recently-dismantled Sind-Peshin section.

The main locomotive, carriage and wagon shops of the I.V.S.R. were at Sukkur (and until 1941 were still in use by the N.W.R.), and the nameplate bearing the name of Adamwahan is interesting. The only apparent reason for wagon building at Adamwahan is that workshops were erected there for the construction of the Empress bridge over the Sutlej river, and may subsequently have been converted as wagon shops. During the construction of the I.V.S.R. and of the bridge, they were probably supplied with material by steamer from Kotri or Karachi.

The "S.P. & D. Ry. Co." (Scinde, Punjab & Delhi) absorbed the Scinde Railway (Karachi-Kotri), the Umrtsur-Mooltan Railway (the present main lines between those cities via Lahore), and the Delhi Railway (Delhi - Ghaziabad - Saharanpur-Amritsar). The old Karachi wagon shops remained in operation until 1931, but the main S.P. & D. (and later N.W.R.) workshops were in Lahore until the present Moghalpura shops were built on the outskirts of that city in 1912. The old Lahore shops are now used as signal workshops. Prior to the formation of the N.W.R. in 1886, the line from Lahore to Rawalpindi and Peshawar was known as the Punjab Northern State Railway, and it also probably used the Lahore shops.

It will be noted that the collection contains plates of the I.V.S.R. and later N.W.R. Sukkur shops, the Karachi shops, and the Lahore shops, all of which are referred to above.

### TRAVEL AND COMFORT

People are talking holidays, and invitations to "Travel in comfort" will, no doubt, be re-issued by the various transport com-

panies as soon as they are in a position to do so. Meantime the good-will displayed by millions of "scumfished" travellers is striking evidence of Anglo-Saxon ability to accept the unavoidable philosophically. It was Bill Nye, the now almost forgotten American humourist, who wrote: "On board a Western train the other day I held to my bosom for over 75 miles the elbow of a large man whose name I do not know." Most of us are equally well acquainted with elbows.—From "The Newcastle Journal."

### 100 YEARS AGO

[From THE RAILWAY TIMES, March 22, 1845]

DISS, BECCLES, and YARMOUTH RAILWAY—Registered provisionally, pursuant to 7 and 8 Vic., c. 110.

#### DIRECTORS.

Chairman—Thomas Osborne Springfield, Esq., Norwich and London.  
William Back, Esq., Stratford St. Mary, Suffolk.  
Calverley Richard Bewicke, Esq., Barabam House, Beccles.  
William Cory, Esq., London.  
William J. Crowfoot, Esq., M.D., Beccles.  
Smythen Jervis, Esq., London.  
John M' Rae, Esq., London.  
Richard Mann, Esq., Bungay.  
Hesekiah Martin, Esq., Yarmouth.  
William Richardson, Esq., London.  
William Ayscough Wilkinson, Esq., London.

The Directors beg to inform the shareholders in this Company that they have concluded an arrangement with the Eastern Union and Eastern Union Extension Railway Companies, to grant a lease to those Companies upon a guaranteed rental of 4 per cent. upon the capital, and an equal division of the surplus profits.

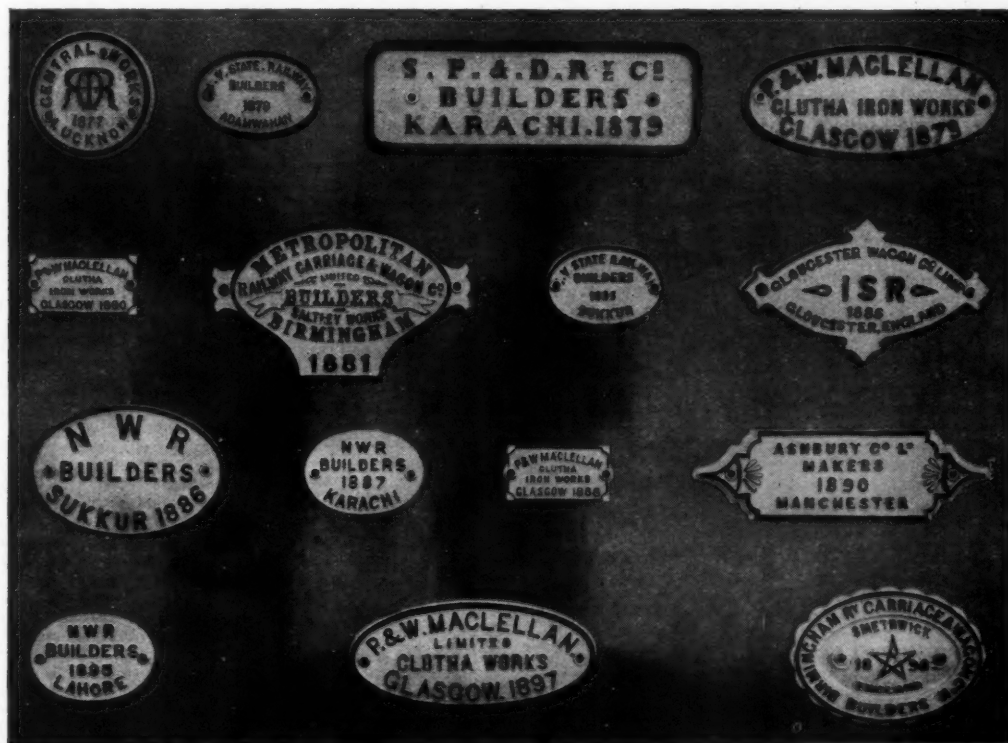
The traffic tables, which have been carefully taken by Mr. Pare, show a net profit of 8 per cent., exclusive of the additional traffic which may be reasonably expected in accordance with railway experience.

The Directors congratulate the shareholders on this arrangement, which secures the subscribed capital of the Eastern Union and Eastern Union Extension Companies, exceeding one million, as a guarantee for the payment of the fixed rental of 4 per cent., and of the additional profit.

The Bill is now before Parliament, and will be proceeded with without delay.

(Signed)

SWYNTEN JERVIS, Chairman pro tem.  
Railway Offices, Pancras lane, 15th March, 1845.



Nameplates from wagons scrapped on the North Western Railway (India)  
(see paragraph above)

## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### CANADA

#### Timber Sleepers on the C.N.R.

It was stated recently by Mr. W. E. Evans, General Tie & Timber Agent, C.N.R., that since the Canadian National Railways started to use treated sleepers on a large scale 21 years ago, replacements have been reduced by 30 per cent. In 1944 the C.N.R. replaced about 5,000,000 sleepers, of which half were treated.

In the 30,551 miles of main line, siding and yard tracks maintained by the Canadian National Railways in Canada and the United States, there are 87,269,461 sleepers in service, an average of 2,856 sleepers for each mile of track.

Mr. Evans also remarked that one of the first railways in Canada to experiment with treated sleepers was the Grand Trunk Railway which, in 1900, used a solution of zinc-chloride. The preservative now used is creosote with an equal amount either of coal tar or petroleum. C.N.R. records show that with this treatment sleepers last as long as 26 to 30 years as against an average of eight to ten years for untreated soft wood sleepers and four to five years for those of untreated hardwood. Another factor which is extending the life of wooden sleepers is the use of sleeper-plates on all C.N.R. main-line tracks.

#### Aluminium Vans

Mr. N. B. Walton, C.B.E., Executive Vice-President of the C.N.R., recently stated that for the first time in Canada, aluminium is being used in the construction of railway wagon equipment. This form of construction is experimental as it is not known definitely whether aluminium will wear as well as steel in freight service. For the tests the company is using three vans out of an order for 1,500 now being built by the National Steel Car Corporation. The doors, roofing and sides will be of aluminium and the change will reduce the weight of each van by 3,600 lb. The saving in weight is considerable because C.N.R. motive power is often called upon to haul 100-van freight trains.

### UNITED STATES

#### Rail Welding in an Erie Tunnel

Recently the Erie Railroad completed a third continuous welding of the rails in its mile-long Otisville Tunnel, on the double-track Graham freight by-pass in western New York State. Corrosion in this tunnel is severe, and led the Erie in 1936 to weld the rails in the eastbound track by the Thermit pressure-fusion process. In 1939, new rail was laid in the westbound track, welded by the Sperry electric flash-butt method. In 1943 it became necessary to renew the rail in the eastbound track, and welding has been carried out again, this time by the Thermit full-fusion process.

In this last relaying, 131-lb. flat-bottom rail has been used. To facilitate the work by obtaining complete possession, all traffic was diverted from the by-pass to the main line between 12 noon and 10 p.m. on each day while the work was in progress, and a total of 286 welds was made in 10 working days, rising from 10 on the first day to 22 on the second, and finally to a maximum of 42 in one day, by a gang of 26 men.

In Thermit full-fusion welding, the rail-ends are  $\frac{1}{2}$  in. apart, and are brought into alignment with specially-designed clamps; the moulds are then applied. First, the joint is pre-heated, by an ignited mixture

of compressed air and kerosene, to between 1,700° and 2,150° F. (a cherry red), which takes 25 min.; a crucible with the appropriate charge of Thermit is then placed over the mould and ignited; after this the molten steel is allowed to pass through the pouring cup and two gates into the lower part of the mould. About 10 min. later the mould is forced off the weld, and grinding begins. In the Otisville tunnel a power-driven precision grinder was used for the running surface of the rail, and a surface-grinder, also power-driven, and on a flexible shaft, for the sides of the head. The portable power-plant needed was carried on trolleys running on the adjacent track, during the period of complete possession of the tunnel, and most of the operations, such as pre-heating and grinding, were carried out on two welded joints simultaneously.

#### A Streamliner for the Wabash

The Wabash Railroad has placed an order with the American Car & Foundry Company for a seven-vehicle streamline train of lightweight stock, at an estimated cost of \$900,000. The formation is to be one baggage van, one baggage-mail van, two coaches (one of a *de luxe* type), one coach-buffet car, one dining car, and one parlour-observation car. This equipment may be intended to replace the present steam-hauled "Blue Bird" express, which covers the 286 miles between Chicago and St. Louis, in competition with the fast services of the Alton and Illinois Central systems, in 5 hr. 25 min. Of this distance, the 271 miles between Granite City, St. Louis, and Englewood, Chicago, are covered in 269 min., including four intermediate stops.

### BERMUDA

#### Report of Transport Commission

The House of Assembly recently received through the Executive Council the report of the Transport Commission. The Commission was not concerned with the question of the private use of motor cars, which, with a few exceptions, remain prohibited.

The Commission states that the Bermuda Railway Co. Ltd. is unlikely to be in operation at the end of five years because of heavy maintenance costs, and that a bus system must be designed not merely to supplement but to replace the railway. The report recommends that the operation of the bus service should be a monopoly, but states that prospects of its successful operation are "marginal," and that it will not be undertaken by private enterprise without a Government guarantee. The Commission recommends that, if the railway and the transport company (the former owned largely by English capital and the latter by Bermudian) reject bus monopoly rights under the terms specified in the report, the Government should assume a monopoly of operation through the medium of an official company, which would enter into a management contract with an experienced overseas operator.

Other recommendations include the drawing of distinction between public freight carriers and vehicles licensed for private business.

#### Conclusions of Legislature

The Legislature, having completed consideration of the report of the Transport Commission, has arrived at almost the same conclusions. The Legislature favours a bus monopoly by private enterprise. It is

proposed to offer the same to a joint venture to be formed by the railway and transport companies. The new company would be given by the Government a guaranteed profit of 4 per cent., and any profit over 10 per cent. would revert to the Government. The two companies so far are holding out for a guarantee of at least  $4\frac{1}{2}$  per cent., but a compromise is expected.

### URUGUAY

#### New Station to be Named "Churchill"

As a result of the construction of a large dam across the Rio Negro and the formation of a lake which will flood a vast area, it has been found necessary to deviate the main line of the Central Uruguay Railway between Central (Montevideo) and Rivera. This involved the elimination of one of the existing stations, and the construction of a station at Km. 324; and the management of the Central Uruguay Railway recently approached the Government for permission to name the new station after the British Prime Minister. In acceding to the request, the Uruguayan Government issued a Decree, bearing the signatures of H.E. the President of the Republic and the Minister of Public Works, the first part of which, freely translated, reads: "In view of the petition presented by the authorities of the Central Uruguay Railway, requesting permission to give the name of 'Churchill' to the new station built at Km. 324—in place of that of 'Cardozo' at Km. 308, which disappears due to the construction of the Rio Negro dam—in homage to the Prime Minister of Great Britain, Mr. Winston Churchill; and, bearing in mind that, as the company itself states, it would constitute a simple but affectionate homage to such an outstanding personality in the field of world-wide politics that the railway station mentioned should bear the brilliant name of 'Churchill,' which, at the present moment, is the symbol of the indomitable battling spirit of the great British nation and the banner representing the hope of a better future for the freedom-loving peoples of the world; the President of the Republic decrees: (1) The Central Uruguay Railway is hereby authorised to give the name of 'Churchill' to the new railway station situated at Km. 324 on the Central-Rivera line."

In the area referred to is situated Canning Station, on the Midland Uruguay Railway, named after George Canning, who played a part in the obtaining of Uruguayan independence. A station on the Central Uruguay Railway's northern line is named "Chamberlain," in memory of a General Manager of the late 'eighties. With the addition of the name "Churchill," the Uruguayan railway system contains three stations bearing the names of eminent British statesmen.

### CEYLON

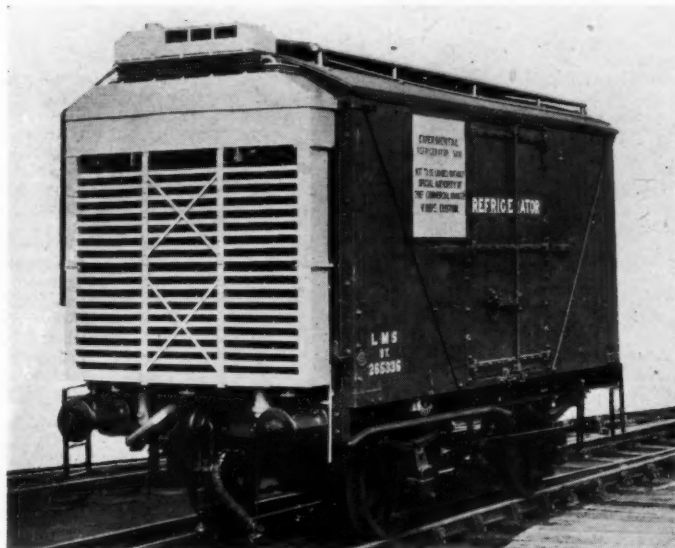
#### Proposed New Trade Union

A proposal for the establishment of a Ceylon Railway Trade Union, in which the interests of all sections of railwaymen in the island could be represented, is under consideration. Such a body would replace various independent organisations representing different groups of employees. The initiative in the matter has been taken by the Railway Clerical Service Association, which has invited delegates from other associations of railwaymen to a preliminary conference. It is stated that the permission of the Government for the organisation of such a body is to be sought after the details of the scheme have been worked out.



## Refrigerated Transport by Rail: Some Limitations and Possibilities\*

*Technical and operating problems, and the efforts made by the L.M.S.R. to overcome them*



ALTHOUGH the possibility of special vehicles and refrigeration arrangements cannot be ruled out in cases where a sufficient flow of traffic makes them economically justifiable and technical requirements demand them, it remains true that the ideal system is one which can be used between any two points on the railway at any time. This means an inevitable dispersion of facilities and equipment which discourages elaboration. Loading, handling, and routine maintenance of the equipment should be kept as simple as possible, and within the capacity of non-specialised staff. The multiplication of types of vehicles is to be avoided, so that the difficulties of providing a given type at short notice are minimised. The system of refrigeration must be flexible enough to cover quite a wide range of temperatures, namely, from the fresh food range, say, 32 deg. F. or more, down to the 15-18 deg. F. ordinarily required for frozen commodities, and occasionally even lower for such things as ice cream and quick-frozen goods.

Most insulated vans conform to the standard four-wheel goods van in their general dimensions and are insulated with 3 in. of cork. As an alternative to the van, the road-rail container which can be transferred from rail to road vehicle and vice versa, has become popular for a wide variety of goods traffic as a means of obviating loading and unloading operations at the rail station. Recent construction has been containers rather than vans. The commonest type is smaller than the standard van, has a capacity of about 560 cu. ft., is designed for a load of up to 4 tons, and has 2 or 2½ in. of insulation. One or more specialised types have greater thicknesses of insulation, up to 6 in.; the carrying capacity of these types is much less. The weight and size of containers is restricted by the crane

capacity at stations; moreover, it would not require much special equipment to make serious inroads into the container's carrying capacity.

The structural framework of insulated vehicles is of wood. In the newer vans and containers, where the thickness of the insulation space permits, this frame-

withstand the additional stresses involved in lifting on and off its road or rail chassis. The gain in efficiency by eliminating the woodwork is well worth while. There are attractive possibilities in the use of metal frames to decrease the proportion of frame area, and this would be a useful future development; but practical experience with metal construction in other (non-insulated) types of containers indicates that knocks and strains in lifting, etc., may easily result in permanent deformation which would be most disadvantageous in an insulated vehicle. Condensation is also apt to prove troublesome.

The desirable thickness of insulation is a matter to which much thought has been given. In ordinary times most journeys would be of less than 24 hr. duration. The cooling of the vehicle is intermittent, as there is almost always standing time or a return journey, without cooling, during which the fabric of the vehicle regains its former temperature, so that the vehicle fabric must be cooled again on each occasion it is used, either during the journey or during a pre-cooling period beforehand.

Ice was the first refrigerant to come into use, and many of the early insulated vans had, at one or both ends, bunkers into which crushed or block ice could be loaded. Its main technical disadvantage is that it will not give temperatures low enough for frozen commodities.

It is, however, in connection with solid carbon dioxide or "dry ice," that most work and development, as to variety of commodities, took place in the years preceding the war. The reasons for the popularity of this refrigerant are that temperatures as low as any needed in refrigerated transport can be provided; it is compact, clean, and convenient; auxiliary equipment is very simple; and, due to the efforts of the manufacturers in developing means of distribution, it is



*Experimental van, showing condenser on roof*

work is of staggered construction, so that the area of direct insulation through woodwork is small. This construction is not possible in the standard-size container without unduly weakening the frame, which must be strong enough to

available at short notice anywhere, without serious loss. The disadvantage, which has appeared most seriously to limit its use in borderline cases, is its cost.

Dry ice is supplied in units of 25 lb.,

\* Abstract of paper by T. A. Eames, M.Sc., read before the Institute of Refrigeration on February 21

and the consequent flexibility in the amount which can be used in particular cases, as well as need for economy in the use of a rather expensive material, demands a more exact estimation of the quantities required than was found necessary or possible with the older water-ice arrangements.

Dry ice needs much less surface area for satisfactory heat exchange than water-ice; the former thus needs less weighty and bulky equipment. It is an advantage, too, that their rate of heat transfer is substantially constant with varying internal temperatures, due to the high temperature difference between dry ice and air.

The advantages of continuous closely-controllable output obtainable by some self-contained refrigerating machine mounted on a van (or container) are very tempting. Such vehicles are quite practicable, and examples have undergone successful tests in this country. Although the climate and the short runs obtaining here are the chief reasons for the lack of demand for elaborate, large-scale refrigerating facilities, one regular flow of traffic in pre-war years did appear to offer scope for experimental work in mechanically refrigerated vans—traffic in frozen

fish from Scotland to London. The L.M.S.R. made a special attempt to provide a van which would be economically attractive and also be robust, simple, and easy to maintain. This van (see accompanying illustrations) is an 8-ton standard van, except that it has 5 in. of Isoflex insulation instead of 3 in. of cork.

The refrigerating machine, conceived and developed by Mr. H. I. Andrews, of the Engineering Section of the L.M.S.R. Research Department, and built by the U.D. Engineering Co. Ltd., is an ammonia-absorption machine working on an intermittent cycle. The power supply is steam from the steam heating pipe. The cycle of operations comprises a cooling and a regenerative portion.

Ammonia, in evaporating, cools the coils behind a sheet metal plate at one end of the van. Evaporated ammonia is absorbed by calcium chloride in an absorber on the van underframe. The heat of absorption is removed by water circulating through an external cooler on one end of the van. In the regenerative stage, steam is passed through the absorber, and the ammonia thus driven off passes through an air-cooled condenser on the van roof, and thence back to the

evaporator. Adjustable thermostatic control governs the change-over between cooling and regeneration; and the evaporator holds enough ammonia for 8 hours' cooling should the van be left without steam (e.g., in a siding). Experience has shown that, technically, the van will do the work for which it was designed; if redesigned, attention would be paid to reducing the weight, which is a serious factor.

Regarding the transport of fruit and vegetables, in only two cases—strawberries and raspberries, both of which are valuable and highly perishable—has there been any promise of a regular refrigerated service justifying itself. Special containers with permanent large-capacity dry ice bunkers have been designed for this service, which also demanded special care in loading to ensure adequate air circulation.

In conclusion, insofar as the limitations of refrigeration in rail transport are technical, there is no doubt that they can be solved. There are, however, other economic limitations, but their solution lies largely outside the railway's own initiative and they can only be solved by the co-operation of many different interests.

## The New Hawkesbury River Bridge



IN the view which we reproduce, the first span of the new Hawkesbury River bridge may be seen on the left, being moved into position. When completed, this bridge will be the largest of its kind in Australia. The existing seven-span girder bridge, seen in the foreground, is being replaced because structural defects were discovered. The new span weighs 950 tons, and is 347 ft. 6 in. in length. It was placed in position on the full tide and came to rest on its piers as the tide fell. The operation was carried through without a hitch.

Reference to the new Hawkesbury railway bridge and approach tunnels, which are on the main line between Adelaide and Brisbane, was made in the Report of the Commissioner for Railways, New South

Wales, for the financial year ended June 30, 1944. In this it was stated that, during the year, further consideration was given to the design of the new bridge in course of erection. In order to establish the symmetry of the steel structures and to reduce the period of time for construction, it was decided to substitute two reinforced-concrete arches for one of the 147-ft. steel spans it was previously intended to erect on the southern side of the river.

Work continued on the construction of the bridge and the two approach tunnels. Two piers were completed and, except in the cases of the new pier for the concrete arches and pier No. 8, the foundations of the remaining piers were completed. The difficulty in obtaining air lock workers retarded progress.

The abutment on the southern side was completed and that on the northern side was approximately 50 per cent. complete. Assembling and riveting the fabricated steelwork received from the workshops was in hand, but progress was somewhat restricted by the shortage of suitable tradesmen. At the end of the year, however, one span was almost complete; this is the one which has now been moved into position.

Reasonable progress was made in the construction of the approach tunnels, and the position at the end of the financial year was that the excavation for the tunnel on the southern side was complete and the concrete lining was 50 per cent. complete, and on the northern side excavation was 98 per cent. complete and concrete lining was 42 per cent. complete.

Fabrication of the steelwork in the departmental workshops progressed as far as the supply of raw steel and available manpower permitted, 700 tons being produced for the superstructure during the year, making a total of 4,700 tons. For the lifting towers and temporary equipment required for handling and placing the assembled spans on piers for transport to the piers, 745 tons of fabricated steel and 44 tons of mechanical work were produced from the shops and were being assembled on the site.

**GALVANISED SOLID STEEL WIRE FOR SIGNALLING PURPOSES.**—This revised British Standard (B.S. 163, Part 2, 1945) replaces the 1936 edition, and is complementary to B.S. 163, Part 1, 1943. As in Part 1, the elongations specified are maximum, and a reverse bend test is substituted for the previous torsion test. Four tensile ranges are specified: 50-60 (which replaces the previous 48-54 ton grade), 60-70, 70-80 and 80-90 tons per sq. in., with a uniform maximum elongation of 7 per cent. It is now stipulated also that the manufacturer shall test each coil of wire, and the inspection procedure as to the selection of test samples has been modified to ensure that such samples are better representative of the bulk. The specification is obtainable from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s., post free.



## RAILWAY NEWS SECTION

## PERSONAL

## INDIAN RAILWAY STAFF CHANGES

Sir Hugh Raper has retired, and has been succeeded as Member (Transportation), Railway Board, by Mr. S. E. L. West, C.I.E., O.B.E., V.D., formerly Director of Traffic.

Mr. J. F. C. Reynolds, on return from leave, has assumed charge of his duties as General Manager, South Indian Railway.

Mr. R. E. Fordham has been elected a Director of Lightalloys Limited.

We regret to record the death of Mr. I. T. St. Clair Pringle, formerly Assistant Agent, Eastern Bengal Railway.

Keith Blackman Limited announces that consequent on the death of Mr. George Keith, Mr. M. Burningham has been appointed Chairman & Managing Director, and Mr. A. L. Ayton, Secretary.

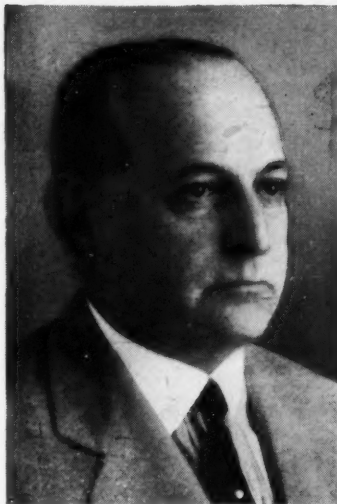
Mr. H. L. Dowsett has resigned from the board of Tarran Industries Limited, which he joined temporarily some months ago for the purpose of carrying out certain technical investigations, now completed. Mr. Dowsett is Joint Managing Director of Dowsett Engineering Construction Limited and other companies.

The board of Tarran Industries Limited lately has been reorganised. The Directors are now Mr. Alan P. Good (Chairman), Colonel Ridley Martin, Mr. R. W. G. Mackay (Managing Director) and Miss Elizabeth Denby (Director of Housing).

Lord Reith has completed his tour round the Empire as head of the British delegation on Commonwealth telecommunications, and arrived in England by air from Canada recently. Lord Reith was Minister of Transport, 1940.

Dr. Agustin N. Matienzo, who, as recorded in our January 19 issue, has been appointed Chairman of the local committee of the Central Argentine Railway, has been a member of that committee since 1933. Dr. Matienzo was born on October 31, 1889. He was formerly Dean of the Faculty of Law & Social Sciences of the University of Buenos Aires, and he has occupied also, among many others, the following academic positions: Member of the Argentine National Academy of Jurisprudence & Social Sciences, and of the Royal Academy of Jurisprudence, of Madrid; Professor of Federal Law in the National University of La Plata; Professor of Commercial Law in the Faculty of Law & Social Sciences of Buenos Aires; delegate of the Faculty of Law of Buenos Aires to the superior council of the University of Buenos Aires (1932-36); Vice-Rector of the National University of Buenos Aires (1938). Dr. Matienzo was Secretary of the Court of Commercial Justice in the Federal Capital, 1912-23; Federal Judge in La Plata, 1923-24; Commercial Judge in the Federal Capital, 1924-28; a member of the Commercial Court of Appeal, 1928-33; and has been a substitute Judge of the National Supreme Court. Dr. Matienzo is a member of the governing committee of the Argentine Association of English Culture, and a member of the National Committee of Culture. He is also a member of the commission for the drafting of the Commercial Code, and is the author of several works in commercial law.

Señor Atanasio Iturbe, who, as recorded in our January 19 issue, has retired from the Chairmanship of the local committee of



Señor Atanasio Iturbe

Chairman of the local committee of the Central Argentine Railway, 1933-44

the Central Argentine Railway, was appointed a member of that committee in 1912, and became Chairman in March, 1933. Señor Iturbe was born in the province of Jujuy on February 4, 1870, and qualified as a civil engineer in 1895. In the next year he was appointed Second Chief of the Fifth Sub-Commission of the Chilean Boundary; in that capacity he participated in the tracing of the boundary line from Point Dungeness to the intersection of meridian 70 with parallel 52, an operation of considerable geodesic importance. A

year later he was appointed Chief of the First Sub-Committee of the Chilean Boundary Commission, and was entrusted with the study and survey of the Cordillera de los Andes between the provinces of Catamarca and Mendoza. In 1899 he was commissioned by Colonel Holditch (delegate of His Britannic Majesty), arbitrator of the boundary between Argentina and Chile, to establish the definite land in the zone of the San Francisco Pass. Two years later he was appointed alternate Professor of Stocks & Materials in the Faculty of Engineering of the Federal Capital. From 1902 to 1907 he was entrusted with the compilation of the results of all the studies carried out by the various committees of the Chilean Boundary Commission; in the latter year he was appointed Director of Public Works of the Municipality of Buenos Aires, and later became Secretary of Public Works.

Lt.-Colonel P. D. Michód, O.B.E., M.I.E.E., formerly Assistant Signal & Telegraph Engineer, L.M.S.R., whose death we recorded last week, was educated at Sedburgh, Berkhamsted, King's College, London, and the Crystal Palace School of Engineering. He joined the former L.N.W.R. in the Telegraph Department in 1893, and became Works Manager in 1897, and Senior General Assistant, Telegraph Department, in 1898. Five years later he was appointed Northern Divisional Assistant, and, in 1905, Chief Telegraph Assistant, Signal & Telegraph Department. In 1925 he was made District Electrical Engineer, Electrical Department, Southern Area, L.M.S.R., and in 1929 was promoted to be Principal Assistant to the Signal & Telegraph Engineer, Derby. He was appointed Assistant Signal & Telegraph Engineer in 1933, but retired later in the same year. Colonel Michód was a Member of Council of the Institution of Railway Signal Engineers from its foundation until 1919. During the last war he served with the Royal Engineers, in France, and later, from September to December, 1916, as second-in-command of the Railway Troops Depot at



Dr. A. N. Matienzo

Appointed Chairman of the local committee of the Central Argentine Railway

Longmoor; he then formed and commanded the Road Troops Depot until August, 1917, from which date until October, 1919, he was in command of the Railway Operating Troops Depot. He was made an O.B.E. (Military) in January, 1919.

Awards are announced in the Fifth Supplement to *The London Gazette*, dated March 13, under the heading of Canada—Department of Transport, of the Imperial Service Medal, to 76 railway employees.

Mr. S. J. Smith, M.I.Mech.E., Chief Draughtsman to the Chief Mechanical Engineer, Swindon, Great Western Railway, who, as recorded in our March 2

Major Hugh A. Henry has retired from the board of the Irish Transport Company, on account of ill health. Major Henry was a member of the board of the Great Southern & Western Railway Company from 1912, and he became Deputy-Chairman of the Great Southern Railways Company in 1925. His place has been filled by the co-option of Mr. Henry B. Pollock, who was previously a Director of the Great Southern Railways Company, but retired in 1942.

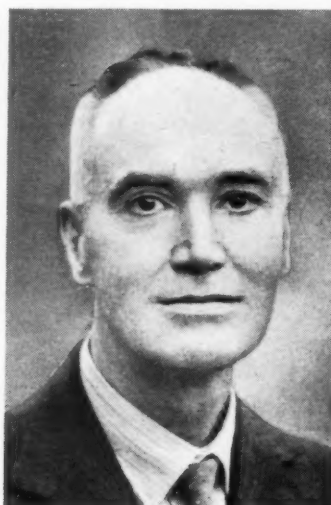
Mr. F. C. Mattingly, Assistant to the Chief Draughtsman, Swindon, Great Western Railway, who, as recorded in our March 2 issue, has been appointed Chief Draughtsman to the Chief Mechanical Engineer,

Goods Manager's Office at Hull, and in 1923 went to Newcastle as Assistant District Goods Manager, L.N.E.R. Later in the same year he took up the new joint Commercial and Operating Department position of Mineral Traffic Controller at Hull. From 1924 to 1926 he was employed in the Trains Section of the Superintendent's Office, York, and from 1926 to 1931 was Assistant to Superintendent (Trains), with general supervision of passenger and freight train working and organisation in the North Eastern Area, at York. He was appointed District Superintendent, Sunderland, in 1931, and District Superintendent, Hull, in May, 1940. Since May, 1940, Mr. Ballan has been Chairman of the Port Emergency Committee, Hull, and he will



**Mr. S. J. Smith**

Chief Draughtsman to the Chief Mechanical Engineer, G.W.R., 1932-44



**Mr. F. C. Mattingly**

Appointed Chief Draughtsman to the Chief Mechanical Engineer, G.W.R.



**Mr. L. Ballan**

Appointed District Goods Manager, Hull, L.N.E.R.

issue, has retired, entered the service of the company in 1899 as an apprentice in the Swindon Locomotive Works. After a period in the testing house, he was transferred to the drawing office in 1904, and subsequently took charge of the locomotive and boiler design sections of the office. In 1932 he was appointed to the post from which he now has retired. Mr. Smith for many years was a part-time lecturer in engineering subjects, and served as the Swindon Education Committee's representative, on the advisory committee of the City & Guilds of London Institute. Recently he was entertained by his colleagues at a farewell dinner, at which his successor, Mr. F. C. Mattingly, presided, and at which personal tributes were paid by Mr. F. W. Hawksworth, Chief Mechanical Engineer, and Mr. W. N. Pellow, Locomotive Running Superintendent, and Mr. K. J. Cook, Locomotive Works Manager, Swindon, and others. Some account of locomotive development during Mr. Smith's 45 years at Swindon is given in an editorial note in this issue.

We regret to record the death on March 12 of Colonel Humphrey Ingram Robinson, T.D., A.M.Inst.C.E., Chairman of the Chatham & District Traction Company, Hastings Tramways Company, London Coastal Coaches Limited, Maidstone & District Motor Services Limited, and Director of the East Kent Road Car Co. Ltd.

Swindon, entered the company's service in 1905 as an apprentice in the Locomotive Works at Swindon, and afterwards served for a period in the testing house. He was transferred to the drawing office in 1910, and placed in charge of the locomotive and boiler design sections in 1932. In July, 1941, he became Assistant to the Chief Draughtsman. Mr. Mattingly lectured at the College, Swindon, for more than 34 years, including 13 years as senior lecturer in machine design and drawing. During the 1914-18 war he served for four and a half years with the Royal Engineers.

Mr. Lancelot Ballan, O.B.E., M.Inst.T., District Superintendent, Hull, L.N.E.R., who, as recorded in our March 2 issue, has been appointed District Goods Manager, Hull, was engaged between 1909 and 1915 in the service of the former North Eastern Railway in the Hull District and the Hartlepool, where he gained experience in various sections of the Goods Commercial and Operating Departments. In 1915 Mr. Ballan joined the Inns of Court Officers Training Corps; he was transferred in 1916 to the Manchester Regiment, and in 1917 to the Docks Directorate at Calais. From 1919-20 he was employed in the Divisional Goods Manager's Office at Hull on special duties, chiefly in connection with coastwise shipping, and was transferred to West Hartlepool in 1920 as Assistant Yardmaster. From 1921 to 1923 Mr. Ballan was Chief Clerk (Railway) in the Divisional

continue to hold that office so long as the need arises. He was made O.B.E. in the King's Birthday Honours last year.

#### INSTITUTE OF TRANSPORT

Among candidates from the overseas centres who have passed the 1944 examinations are:—

*Associate Membership, Parts 1 & 2:* Messrs. J. N. Murray (L.M.S.R.) and S. L. Wild (South African Railways & Harbours).

*Associate Membership, Part 1:* Mr. E. S. Hutchins (Buenos Ayres Great Southern Railway).

*Associate Membership, Part 2:* Messrs. W. R. Bowles (L.M.S.R.) and D. L. Powell (South African Railways & Harbours).

*Graduateship, Parts 1 & 2:* Messrs. R. M. Antrobus, D. B. Garisch, N. S. Louw, C. E. Lubbe, G. L. Malherbe, R. T. Van Der Linden, D. C. Vaughan, M. T. S. Vos, J. Walls and R. C. Blunt (all of South African Railways & Harbours).

*Graduateship, Part 1:* Messrs. C. W. Fick, A. A. Fullalove, D. H. Price and P. J. Van Rensburg (all of South African Railways & Harbours), W. S. Mee (Nigerian Railway) and A. R. Silva (Ceylon Government Railway).

*Graduateship, Part 2:* Messrs. F. A. Browne, C. A. Bruyns, C. P. Cornelius, D. E. Davies, C. J. Du Preez, H. J. Jacobs, W. C. King, A. H. Lotz, J. A. Moolman, R. P. L. Preiss, A. De L. Swart, E. H. Tootell, G. P. Visagie, and M. S. Voss (all of South African Railways & Harbours), and A. Channugurajah (Ceylon Government Railway).



## TRANSPORT SERVICES AND THE WAR—286

### Easter Travel Arrangements

The British main-line railways have arranged for their services during the Easter period to be as follows:—On Good Friday, normal weekday services; on Easter Eve, normal Saturday services, but with some workmen's and business trains cancelled; Easter Day, normal Sunday services; Easter Monday, normal weekday services, but with some workmen's and business trains cancelled. Provision will be made for the transport of workers to and from their work on every day of the holiday period.

### Military Specials in January

The movement of military traffic by rail continues to be very heavy. During January the British railways ran more than 14,000 special trains for military personnel and stores, 230 ambulance trains, 20 prisoner-of-war trains, and nearly 200 Forces mails and parcels trains. In the

distributed around the base on a radius of 60 ft., and chimney brickwork was scattered over an area of 120 yards in every direction. The base of the chimney, which at ground level was 3 ft. 6 in. thick and had an internal dia. of 16 ft., was split into approximately equal 8-ft. sectors, which were laid flat in symmetrical formation around the base.

Falling debris severed steam and water pipes connected with the working boilers, instantly releasing high-pressure vapours and scalding water. Also, the main flue was blasted into an indescribable tangle, setting free hot flue gases and soot and causing flames to shoot from the boiler fronts into the firing alley. Although the incident occurred when men were changing shifts, so that more were present than at other times, none was lost. The Shift Engineer co-ordinated the local A.R.P. and Fire Brigade Services and isolated the damaged section of the station.



Symmetrical disposition of segments of Durnsford Road power-house chimney, Southern Railway, destroyed in an air raid on October 15, 1940

same period, despite bad weather, the railways also dealt with upwards of 3,000,000 wagons of ordinary freight traffics.

### Railway Wagons in Alsace

The recent liberation of Alsace resulted in an addition of some 2,000 wagons (mostly in a serviceable condition) to the stock of the French National Railways. These had been left by the Germans in their retreat. In normal times the goods traffic of Alsace absorbed an average of some 39,000 wagons.

### The Durnsford Road Power House Incident

Details have been released recently of the air raid damage to the Southern Railway power house at Durnsford Road, Wimbledon, on the night of October 15, 1940. About 9.45 p.m. a 500-kg. bomb struck the west chimney stack about midway, and the ensuing explosion caused its complete collapse. The blast destroyed the main flue and damaged the boilers. Boilers on both the east and west sides of the boiler house, together with other auxiliary plant, were damaged by falling debris. About 1,300 tons of material were used in the construction of the stack, which was 231 ft. high and 13½ ft. in dia. at the top. The flue, supported on pillars, was 210 ft. long and roofed over by cast-iron plates weighing between 60 and 70 tons. The top cap of the chimney was

The immediate effect of the damage was to put half the boilers out of action, and so reduce the maximum capacity of the station by 50 per cent. Repairs were put in hand at once, and a new steel chimney 100 ft. high and 9 ft. in dia. was erected to replace the original brick structure. The construction of this chimney and the new flues, together with the introduction of induced-draft plant equipment, enabled the station to carry its full load on February 19, 1941, only 127 days after the damage. During the whole time repairs were in hand, electric train services were operated to the limit of the restricted capacity of the station, although trains had to be run at reduced speed.

### British Overseas Airways

Every day during the year 1944, aircraft of the British Overseas Airways Corporation flew an average distance of more than 51,000 miles, the equivalent of upwards of twice round the world. Figures issued by the corporation covering its operations from January to December, 1944, show a great expansion in every branch of its activities. The total miles flown by its aircraft during the year amounted to nearly 19,000,000, an increase of almost exactly 50 per cent. over the total miles flown in 1943. The number of passengers carried was approximately 101,000, an increase of more than 50 per cent.; cargo carried showed an increase

of 69 per cent.; and mail of over 51 per cent. Detailed figures, compared with those for 1943, are as follows:—

	1943	1944	Percentage increase
Total miles flown	12,575,417	18,813,913	49.6
Total passengers carried	66,565	100,852	51.5
Cargo (tons)	3,871	6,560	69.5
Mail (tons)	1,307	1,980	51.4
Capacity ton miles	27,897,268	46,116,424	65.0
Passenger ton miles	11,902,095	17,260,879	45.0

Since the war began, the corporation's aircraft have flown more than 57,000,000 miles. The corporation continues to operate well over 50,000 miles of routes. These include two Atlantic services, one by flying-boats and the other by land-planes; the latter is in its fourth winter of operation, and is the only air service to have operated in both directions over the North Atlantic through four winters. The corporation also operates services to Stockholm, Lisbon, Madrid; to North Africa and West Africa, to Egypt, and to South Africa. There is a regular service via India to Australia, 13,000 miles away, operated in conjunction with the corporation's Australian associate, Qantas Empire Airways; this is the longest civil air route in the world. The corporation also operates a network of services radiating from Cairo, to Turkey, Persia, Abyssinia, and other countries, and via Aden and Southern Arabia to India. Other routes still may not be made public for security reasons. A list of publicly-announced routes is appended:—

United Kingdom—Lisbon—Bathurst—Belem—Trinidad—Bermuda—Baltimore (maintained with flying boats)  
 United Kingdom—Montreal (North Atlantic return ferry service; maintained with landplanes)  
 United Kingdom—Eire (Shuttle service)  
 United Kingdom—Stockholm  
 United Kingdom—Lisbon (direct)  
 United Kingdom—Lisbon (via Madrid)  
 United Kingdom—Lisbon—Gibraltar  
 United Kingdom—Lisbon—Rabat—Port Etienne  
 Bathurst—Freetown—Takoradi—Accra—Lagos  
 United Kingdom—Jerba—Cairo—Habbaniyah—Bahrain—Karachi—Calcutta  
 United Kingdom—Tripoli—El Adem—Cairo  
 United Kingdom—Rabat—Tripoli—Cairo  
 Cairo—Lydda—Baghdad—Basra—Bahrain—Jiwani—Karachi—Delhi—Allahabad—Calcutta. Connecting with this service at Karachi, Qantas Empire Airways, an associate company of B.O.A.C., operates via Ceylon to Australia.  
 Cairo—Luxor—Port Sudan—Asmara—Kamaran—Aden—Riyah—Salalah—Masirah—Jiwani—Karachi  
 Cairo—Wadi Halfa—Khartoum—El Fasher—El Geneina—Maiduguri—Kano—Lagos—Accra  
 Cairo—Wadi Halfa—Khartoum—Malakal—Laropi—Stanleyville—Coquilhatville—Leopoldville—Libreville—Lagos  
 Cairo—Ankara  
 Cairo—Damascus—Baghdad—Teheran  
 Cairo—Port Sudan—Jeddah  
 Cairo—Luxor—Jeddah—Port Sudan—Asmara—Kamaran—Aden—Addis Ababa  
 Cairo—Luxor—Port Sudan—Asmara—Aden  
 Cairo—Wadi Halfa—Khartoum—Malakal—Juba  
 Kisumu—Nairobi—Kasama—Gwelo  
 Durban—Lourenço Marques—Beira—Mozambique  
 Lindi—Dar-es-Salaam—Mombasa—Kisumu—Port Bell—Laropi—Malakal—Khartoum—Wadi Halfa—Luxor—Cairo—Kallia—Habbaniyah—Basra—Bahrain—Dubai—Jiwani—Karachi—Raj Sammand—Gwalior—Allahabad—Calcutta  
 Kisumu—Mombasa—Dar-es-Salaam—Lindi—Pamunzi—Diego-Suarez (Madagascar)

Reference to the important position of the B.O.A.C. in the Government post-war plans is made in an editorial article, page 296.

### Swedish Iron-Ore Traffic

Since October 20, 1944, not a single ore train has left Kiruna in Swedish Lapland for the port of Narvik in Norway, according to a report in the Stockholm daily paper, *Dagens Nyheter*, which comments: "It is satisfying that the export of iron-ore to Germany has now entirely ceased." From the same period all Swedish ports in the Baltic and Gulf of Bothnia have been closed to German traffic and no German ships are loading at Narvik. The Lapland Iron-ore Railway, and its relationship to the German war industry, formed the subject of an article in our issue of April 19, 1940.

## British Air Transport

### Principal points from White Paper on Government policy

The eagerly-awaited outline of the Government's policy on British Air Transport was published last week as a White Paper.\* After enunciating certain general principles which the Government considers as applicable to British air transport, the view is expressed that although in the interests of order and economy, competition between United Kingdom operators on individual air routes must be eliminated, it is not intended to restrict the operation of charter aircraft, as this will provide a field of development which will best be served and stimulated by the entry of competing operators.

The Government is convinced that the policy of a single chosen instrument, whatever its merits may have been in the past, is unsuited to deal with the great expansion of the future. Although, however, it desires to eliminate wasteful competition between British operators on the same route, it feels it none the less desirable both to avoid a sealed pattern of management and operation, and to encourage different managements to try out their own ideas. It feels that air transport can be greatly assisted and stimulated by co-operation with other forms of transport and suggests that the British Overseas Airways Corporation, the railway companies, steamship lines and travel agencies can make a valuable contribution to the solution of the air transport problem. It is, therefore, the essence of the Government's plan that those interests concerned in transport by sea and land should be brought into a real and effective partnership with the organisations which will be responsible for transport by air.

#### THREE MAIN CORPORATIONS

The Government has decided that the most efficient organisation will be obtained by means of the following three main air transport corporations which will be responsible for air services on the following routes:—

1. The Commonwealth air routes together with the trans-Atlantic services to the United States, and the services to China and the Far East, to be operated by the British Overseas Airways Corporation. On certain routes British shipping lines will be afforded the opportunity of becoming associated with B.O.A.C. but the corporation normally will retain the predominant financial and management interest.

2. European air routes and the internal services of the United Kingdom to be operated by a new company in which the railway, short-sea shipping lines, travel agencies and B.O.A.C. will participate; also an opportunity will be extended to the small number of independent British air operators who ran air lines before the war of participating in the new corporation and/or in the capital of any subsidiary company which the Government may agree should be formed to operate their route.

3. The South American route, to be operated by a new company composed of the British shipping lines operating to South America which have associated themselves for this purpose as British Latin-American Airlines Limited. These will have the predominant interest, but B.O.A.C. will also partici-

pate in the capital and management of the new corporation.

#### MINISTER OF CIVIL AVIATION

The Government proposes that the appointment of members of the B.O.A.C. shall be vested in the Minister for Civil Aviation and that he shall approve the appointment of the B.O.A.C. representatives and the other directors to the boards of the various companies. No indication is given in the White Paper, however, of the extent to which the various interests concerned will participate in the capital structures of the second and third main companies or of their representation on the boards. Once the boards have been constituted, however, it is a cardinal principle of the plan that the corporations and the companies should be responsible for the operation and management of the air services under their control, subject to the Minister having a general control over broad aviation policy. It is also part of the Government's plan that the corporations shall directly or through their approved subsidiaries, operate all the air routes assigned to them.

#### SUBSIDIES

So far as subsidies are concerned, the Government's general policy is that both internal and external air services should operate as far as possible without subsidy. So far as internal services are concerned, the proposed participants have expressed their willingness to run without subsidy an agreed schedule of routes which will include, as well as remunerative services, those which the Government regards as desirable in the public interest, although some of them, if run in isolation, could not be run at a profit.

In the international field the Government has already declared that it is its policy to reduce wasteful competition and to control subsidies with the object of ultimately eliminating them altogether. In any reciprocal arrangement the Government makes with foreign countries it will stipulate for the reasonable application of the principles of avoiding uneconomic competition by maintaining a broad equilibrium between transport capacity and traffic offering, a fair division of services between national air lines engaged on international routes, and an agreement as to freight and passenger charges.

In this way the Government hopes to secure the elimination of wasteful competition and subsidies on the international routes in which Great Britain is interested. It is also its intention that the agreed schedule of services on the European routes and the Latin-American services should be operated without subsidy, provided always that services which the Government regards as essential to maintain are not faced with subsidised competition. So far as the Commonwealth services are concerned, the operation of certain of these routes has required a subsidy in the past. These routes are so essential that, in the interest of Commonwealth communications, the Government is prepared to afford the necessary financial help to B.O.A.C. to operate them.

#### ROUTES TO BE FLOWN

So far as the routes to be flown are concerned, it is intended that the agreed schedule of routes to be initially assigned

to the three corporations shall include all those which in the view of the Government it is essential that United Kingdom air lines should be ready to operate as soon as war conditions permit and the necessary aircraft are available. As traffic develops, new routes may emerge but the Government considers that these should be left open to any operator—one of the main corporations or some entirely new operator—which can establish that it is best fit to run them. If, however, the Government desires to have a particular route operated within or without the Commonwealth which is not in the agreed schedule, the Government would be prepared to afford the corporation temporary financial assistance on proof that the service could not be run without loss.

#### ASSURANCE OF REASONABLE FACILITIES

To ensure that the interests of the users of air transport are adequately and continuously safeguarded, the Government proposes to confer on an impartial tribunal, jurisdiction to consider complaints as to such matters as the absence of reasonable facilities, the granting of undue preference and the reasonableness of rates and charges of United Kingdom air lines. This tribunal would have power to enforce compliance with its decisions. In the case of complaints relating to overseas services, which are necessarily regulated by inter-Government agreement, any decisions of the tribunal must be subject to confirmation by the Minister.

#### CO-OPERATION BETWEEN CORPORATIONS

To ensure the maximum of efficiency and economy, the three air transport corporations will join in the creation and management of a combined organisation for the overhaul of aircraft. They will also maintain a combined training establishment at which their flying and technical staffs will be trained and at which refresher courses will be available. The Government will also make it a condition that the terms of service of these corporations shall be those of a "model employer."

#### CO-OPERATION WITH COMMONWEALTH AND FOREIGN OPERATORS

In the case of the Commonwealth services, the Commonwealth Governments desire to operate parallel services to the United Kingdom and to make this system effective, arrangements are being made at terminals and along the routes. Provision will also be made for a pooling of receipts and expenditure when this is agreed to be advantageous. The Government also will welcome the closest co-operation with foreign air-line operators running services to the United Kingdom and while parallel services might be run initially, the Government feels that ultimately the running of joint services through the medium of subsidiary companies may present great advantages.

#### PROVISION OF AIRCRAFT

It is the intention of the Government and the corporations that British aircraft shall be used as soon as they are available, and the Ministry of Aircraft Production, in collaboration with the Brabazon Committee has already placed orders for a number of civil types to be leased to the corporations concerned. As soon as circumstances permit, the corporations and their subsidiaries will be free to buy aircraft direct from the manufacturers.

#### CONCLUSION

Finally, the Government claims that in framing its air policy, it has sought to apply to the development and expansion

\* Cmd. 6605. H.M. Stationery Office, price 2d.



of our own air services those principles of ordered progress which it has advocated in the international sphere. By bringing into partnership, on practical business lines, those elements which, by reason of their experience and organisation, can contribute to the full and rapid development of British air transport, it believes it will enable British civil aviation, which has had to be subordinated to the supreme war effort, to take its rightful place in the airways of the world.

## New French Railway Distance Tables

New distance tables relative to passenger and goods traffic on French railways were introduced on June 1, and August 1, 1944, respectively. Preparation of these tables complies with the provisions of an article in the statute of the Société Nationale des Chemins de Fer Français which states that, when fares or rates are determined according to the distance to be covered, such charges must be based on distance tables approved by the Ministry of Public Works. When the S.N.C.F. took over the systems of the six former French railway administrations, existing tables were adopted without modification, pending the completion of new and simplified tables for the whole system.

The adoption of two different scales, one for passenger transport and the other for goods traffic, was justified by the fact that, for passenger trains, distances are measured on routes usually followed by travellers, while goods take the shortest routes available.

The passenger distance tables consist of three parts, A, B, and C. Table A gives the distances from stations on through lines to junction stations, and shows also the operating area of each station. Table B gives the distance between any junction station and any other junction station by the customary passenger routes. Table C consists of five volumes, corresponding to the five regions of the S.N.C.F. Each volume is divided into sections, and at the beginning of each section tables show the distances between stations situated in the same area, i.e., between stations having the same junction station. Table C consists of a map which enables distances to be calculated according to any routes other than those shown in table B.

The goods distance tables also comprise three parts, A, B, and C. Table A shows the distances from stations on through lines to their respective junction stations. The goods table A does not give the operating area of the stations because these indications, for goods traffic, are both numerous and extensive. They are, therefore, included in a special document known as the *Nomenclature marchandises des Etablissements S.N.C.F.*

Goods table B gives the shortest distances between any two junction stations. It consists of five volumes corresponding to the five regions of the S.N.C.F. system. Each volume is divided into sections, and, at the beginning of each section, tables show the distances between stations on the same section of line.

Table C, used in conjunction with Table A, gives distances between any two stations via any route other than the shortest one.

An advantage of the new volumes of tables is that they weigh only a fiftieth of the former tables.

For goods traffic original tables were convenient because, for despatch over one system only, the shortest distance

could be ascertained at a glance. On the other hand, the S.N.C.F. tables make it necessary to find the shortest distance by comparing distances between the same places over various routes. Generally four routes are involved, because distances from stations on through lines, in most instances, are measured to two junction stations. To facilitate matters, therefore, the S.N.C.F. has issued a supplement for every individual station showing, at a glance, the distance between that and any other station on the S.N.C.F. system. This document is called the *Répertoire de distances*, or Distance Record. Each supplement consists of 40 pages only and provides a handy reference for the general public. The distance records published cover some 1,100 of the most important stations and junctions.

## Westinghouse Brake & Signal Co. Ltd.

The sixty-fourth ordinary general meeting of the Westinghouse Brake & Signal Co. Ltd. was held at Winchester House, London, E.C. 2.

Captain A. R. S. Nutting, O.B.E., M.C., Chairman of the company, who presided, said the activities of the company remained substantial in volume and variety. He was glad to be able to report that orders for normal peacetime products were increasing. The home railways had made great efforts most successfully in the national interest during many years of curtailed supplies and shortages, and the inevitable result had been to create a pent-up demand for renewals, replacements, and new works. The known ravages of war on railways everywhere, and their inability to secure the necessary supplies to meet requirements, had increased that pent-up demand. It was essential for a company like the Westinghouse Brake & Signal Co. Ltd. to be in a position adequately to fulfil that part of the demand which would be entrusted to it. The directors had no doubt about their ability to cope with the situation. The factory was well equipped and modern, there was ample room for extension, and capacity could be increased without difficulty.

The specialised and accumulated experience of the staff of the company, both technical and commercial, would prove an important factor in dealing with the situation. The works manager, Mr. H. A. Cruse, who had joined the board, was satisfied with the capabilities of his team at the factory. The sales organisation was in the very capable hands of Mr. E. J. Fouracre, the Sales Manager, who had the specialised experience of a lifetime in the brake and signal fields. Major L. H. Peter, the Chief Engineer, was engaged on a complete review of the technical engineering side of the company's business. The Joint Chief Accountants, Mr. Macdonald and Mr. Forrest, and the Secretary, had settled plans for re-organising their respective departments to meet the requirements of the post-war era.

The companies engaged in the brake and signal industry since 1940, at the instance of the Government, had co-operated closely in an ideal manner through the Railway Brakes & Signals Industrial & Export Group. This group was allied, by means of representation on a joint committee, to other groups engaged in the railway engineering supply industries. Each and every member of the groups retained his complete individuality and identity and freedom of action.

Captain B. H. Peter, C.B.E., Managing Director, said it was the tenth occasion on which he had appeared at the meeting as chief executive of the company and his thirty-fourth year in its service. During these ten years, five of peace and five of war, the company had earned £1,832,000 in net profit, principally in the peace years and had paid the shareholders £930,000, or 130 per cent. in total dividends. The remaining £902,000 had been spent on buildings, plant and machinery; everything had been done to keep the company up to date and able to improve its products and increase its output in the most efficient way. At the present time the company was full to the roof with vitally important work, some of it its standard products, but much of it of a specialised kind for war purposes. Its great export business existing before the war had shrunk from over 50 per cent. to about 2 per cent. or 3 per cent., and one of the problems after the war would be to recover that trade.

## The English Electric Co. Ltd.

The annual general meeting of the English Electric Co. Ltd. was held recently at Queen's House, Kingsway, London, W.C.2.

Sir George H. Nelson, M.I.Mech.E., M.I.E.E., Chairman & Managing Director, who presided, in the course of his speech said that orders for normal products of the company were reaching them in satisfactory volume.

The company had taken steps to play its proper part in the export trade, in which it had always been prominent. It was, however, already finding that violent competition had arisen by overseas manufacturers offering plant at prices obviously considerably below their home prices and their cost of production. No doubt many of these prices were being put out as feelers as to the world level of prices, and to establish themselves in British markets. It was, however, most unfortunate that manufacturers should be permitted by their Governments to submit prices below the true costs of the countries concerned. Such a policy was inconsistent with such international agreements as that made at Bretton Woods for the stabilisation of currencies. The submission of prices below the cost of production had the same dislocating effect on world trade as currency manipulation.

He was disturbed by some of the political propaganda on nationalisation which had been prevalent for some time. He said this not as representing the interest of proprietors of industry, but because of the ultimate disadvantages he was sure nationalisation would bring to the masses of our people. He had heard no argument at all to show that nationalisation ultimately would achieve what is our greatest need, if we were to compete with the rest of the world—namely, improved efficiency. Moreover, the notion that nationalisation would relieve industry of an exorbitant tribute paid to stockholders must appear strangely futile if it was remembered that in a company such as the English Electric Co. Ltd. at the present time ordinary dividends amounted to no more than 1 per cent. of the turnover, and the remaining 99 per cent. went in payment for materials, to staff, to workpeople, to taxation, and to provide the normal trading reserves on which the future full employment of that staff and those workpeople is dependent.

## Questions in Parliament

### Lighting of L.N.E.R. Coaches

The Rev. R. W. Sorensen (West Leyton—Lab.) on March 7 asked the Parliamentary Secretary, Ministry of War Transport, if he was aware that on certain suburban L.N.E.R. lines some coaches had complete lighting and others partial; and whether he would arrange for all carriages to have complete lighting and for the remaining shades to be removed.

Mr. Noel-Baker: I am making inquiries and I will write to the Rev. R. Sorensen as soon as I can.

### Glasgow Underground Railway Plans

Mr. J. J. McGovern (Glasgow, Shettleston—I.L.P.) on March 7 asked the Parliamentary Secretary, Ministry of War Transport, what discussions he had had with Glasgow Corporation concerning plans for the construction of an underground railway in Glasgow and district for the purpose of relieving traffic congestion in the post-war period; and whether he proposed to inaugurate an enquiry into this urgent question.

Mr. Noel-Baker: No proposals for the construction of an underground railway in Glasgow have been made to my Department, and there have been no discussions with the corporation on the subject.

Mr. McGovern: Is the Minister aware of the desirability of relieving the tremendous congestion in Glasgow, and will he draw the attention of the Glasgow Corporation to the need for developing some form of underground railway in order to relieve that congestion?

Mr. Noel-Baker: On so important a matter as an underground railway, I think I ought to await some initiative from the Glasgow Corporation.

Mr. McGovern: Are there any plans ready? Has the Minister been informed of any by the Glasgow Corporation?

Mr. Noel-Baker: I am not aware of any such plans.

### Transport of Seed Potatoes

Mr. Alexander Walkden (Bristol, South—Lab.) on February 28 asked the Parliamentary Secretary, Ministry of War Transport, whether he was aware that the possibility of British growers being able to produce sufficient potatoes for the country's needs during the coming season was seriously being menaced by their inability to obtain seed from Scotland, alleged mainly to be due to lack of transport; and what steps he was taking to provide more transport.

Mr. Noel-Baker stated in a written answer: The recent severe weather and the shortage of coasters have both delayed the movement of seed potatoes from Scotland. By February 10, however, 180,000 tons had been transported, that is, about half the total tonnage to be moved. Special priority is being given to seed potatoes both by rail and coaster, so that they may reach the growers in time for planting.

Mr. Henderson Stewart (East Fife—Lib.-Nat.) on February 28 asked the Parliamentary Secretary, Ministry of War Transport, if he was aware of the almost complete breakdown of rail-transport facilities for the dispatch of seed potatoes from Fife, that due to the cold weather potatoes only recently were ready for dispatch, that large quantities must be railed within the next six weeks and that heavy supplies of dressed seed were accumulating in bags at most farms at the risk of destruction if another frost comes, and what action he was taking.

Mr. Noel-Baker wrote in reply: I cannot

accept Mr. Stewart's assertion that there has been a breakdown of railway transport for the carriage of seed potatoes from Fife. After the recent severe weather, loading began again on February 5. Between then and February 24, the railways supplied 2,760 wagons, of which 2,300 have so far been loaded. In the two weeks which ended on February 24, in addition to the tonnage conveyed by rail to the ports for shipment, 7,700 tons were taken from Fife by rail throughout. This figure compares with 6,300 tons carried in the corresponding two weeks a year ago. As I have just said in answer to Mr. Alexander Walkden, special priority is now being given to the movement of seed potatoes.

### Carriage of Building Materials

Mr. Oswald Lewis (Colchester—C.) on March 7 asked the Parliamentary Secretary, Ministry of War Transport, if he was aware that the restrictions imposed by his department on the carriage of various building materials and fittings by rail were causing delay in the carrying out of repairs to war-damaged premises in some districts and if he would give permission for such materials and accessories to be moved by rail to places where they were required for such purposes.

Mr. Noel-Baker: I have received no information that repairs to damaged premises have been delayed by the restrictions which have had to be imposed on the normal acceptance and movement of traffic on some sections of the railways. There are special arrangements whereby consignments of building materials urgently required for the repair of bomb-damaged buildings may be secured, in spite of any traffic restrictions.

### Merseyside Passenger Transport

Mr. R. V. Kirby (Liverpool, Everton—Lab.) on February 28 asked the Parliamentary Secretary, Ministry of War Transport, whether he was considering co-ordinating the various forms of passenger transport among the local authorities and private interests on Merseyside, as had been accomplished in the Greater London area by setting up the L.P.T.B.

Mr. Noel-Baker in a written answer stated: No such proposal is before me. The Minister of War Transport is ready always to consider any sound scheme for promoting co-ordination and increased efficiency in transport services, which local authorities and private interests may lay before him.

### Severn Barrage Scheme

Mr. Ellis Smith (Stoke-on-Trent—Lab.) on March 6 asked the Minister of Fuel & Power if he could now make a statement on the report on the Severn Barrage Scheme; and if he would ask the committee or appoint others to investigate the practicability of preparing similar schemes for the rivers Conway, Dee and Mersey, and for harnessing the tides at Morecambe and the Solway.

Mr. Tom Smith (Joint Parliamentary Secretary, Ministry of Fuel & Power): The Minister of Fuel & Power is not yet in a position to make a statement on the report on the Severn Barrage Scheme which is under active consideration. Concerning the latter part of the question, I would refer Mr. Smith to the Minister's answer to his question on October 3 last.

Mr. Ellis Smith: Seeing that it has taken over 10 years to produce a report on the Severn, has not the time arrived when further investigation should be made to the practicability of harnessing the rivers mentioned in the question?

Mr. T. Smith: I can assure Mr. Smith that the Severn Barrage Scheme is actively

being considered at the moment, and the extra powers which are being asked for are also under consideration.

### French Inland Waterways

Mr. W. W. Astor (Fulham East—C.) on February 28 asked the Parliamentary Secretary, Ministry of War Transport, whether his attention had been called to the grave difficulties in the inland water-transport system of France due to the shortage of tugs; and whether he was considering helping France in her present difficulties through a loan of tugs for this purpose.

Mr. Noel-Baker: Yes, Sir. I am aware of the grave difficulties caused to the French Government and people by the shortage of tugs on their inland waterways. Some suitable tugs already have been handed over by the Allied authorities, and I hope that more will be made available in the early future. The matter will continue to receive unremitting attention.

Mr. Astor: Is there any hope that they will get some tugs during the present winter?

Mr. Noel-Baker: Yes, they have some already and more will be handed over in a very few days.

### Iron and Steel Carriage Costs

Mr. Ellis Smith (Stoke-on-Trent—Lab.) on February 22 asked the Minister of Supply if he could give the amount added for average carriage over cost of production, respectively, for basic pig-iron, soft hearth billets, wire rods, wire, galvanised and black steel sheets and plates under one-eighth-inch thick and finished tube.

Sir Andrew Duncan (Minister of Supply) in a written answer stated: The average cost of carriage of the products is:

	Per ton
	£ s. d.
Basic pig-iron .. ..	0 6 0
Soft basic billets .. ..	0 6 0
Wire rods .. ..	1 0 0
Wire .. ..	1 9 0
Sheets .. ..	1 0 0
Light plates .. ..	1 0 0
Tubes .. ..	1 10 0

### Statutory Rules & Orders

Mr. Craik Henderson (Leeds North-East—C.) on February 28 asked the Prime Minister whether his attention had been called to the frequent use in S.R. & Os of such phrases as "if it appears, to a particular Minister" or "the Minister, if he is satisfied" and similar phrases, making the Minister the sole judge; and whether he would see that, in future Orders, persons aggrieved should have a right of appeal to the Courts or to an independent body.

Major C. R. Attlee (Deputy Prime Minister): The Government is in full sympathy with the view that Statutory Rules & Orders should be so framed as not to exclude from the jurisdiction of the courts of law justiciable issues, such as questions of vires and interpretation, but as was pointed out in the Report of the Donoughmore Committee on Ministerial Powers, there is a clear distinction between these justiciable issues and administrative decisions of policy which can be taken only by the Minister who is responsible to Parliament for the conduct of the service in question. Under many of the Defence Regulations, for example, the decision whether orders imposing certain restrictions or regulations are necessary for the efficient prosecution of the war must be taken by the responsible Minister, and accordingly it is necessary to use such phraseology as that quoted in Mr. Henderson's question. If, however, he will give us particulars of some sample Statutory Rules & Orders which he thinks are open to objection, I shall be glad to have the matter further looked into.



## Staff and Labour Matters

### Agricultural Wages

The Agricultural Wages Board, at a meeting on February 21, made orders, to operate from March 4, increasing the minimum rate of wages for all adult male workers by 5s. a week, making the new minimum 70s., and the overtime rates of such workers by 1d. an hour. The orders also provided that, consequent on the increase in the weekly minimum wages, the rates for casual and part-time adult male workers shall be increased by 1d. an hour.

### Holidays in 1945

The Government, recognising that industry will look for guidance in the planning of holidays this year, has announced that, subject to the overriding needs of the war situation and the claims of production and of essential services it is of opinion that:—

(a) Industrial agreements and common practice in relation to the annual holiday should continue in general to be observed;

(b) On the occasion of public holidays in England and Wales, the following days generally should be approved holidays:—

Saturday	...	...	March 31
Easter Monday	...	...	April 2
Saturday	...	...	May 19
Whitsun Monday	...	...	May 21
Monday	...	...	August 6
Monday	...	...	December 24
Christmas Day	...	...	December 25
Wednesday	...	...	December 26
or alternatively			
Monday	...	...	December 31
Tuesday	...	...	January 1
Wednesday	...	...	January 2

(c) In Scotland, similarly, arrangements should be made for a corresponding break to be given on the occasion of the holidays which are customarily observed in the Spring, Summer, Autumn and at the New Year.

It should be recognised that the staggering of holidays is more than ever necessary. There is continuing heavy pressure on transport to meet war requirements and the needs of essential civilian production, and travelling difficulties will continue to be serious, as will also the strain on the resources of holiday resorts. The Government accordingly hopes that industry again will co-operate with the regional boards of the Ministry of Production in securing the maximum practicable degree of spread-over of holidays, both within establishments and between firm and firm and district and district.

The Ministry of Education will be repeating its request of last year to local education authorities and other schools authorities that school holidays should be arranged as far as possible to harmonise with industrial holidays.

### Signal Fitter's Death

Mr. Justice Stable in an action at York Assizes on February 21 gave judgment for the London & North Eastern Railway Company with costs, when Mrs. Muriel Ivy Berriman, of Hull, sued the company to recover damages for loss sustained by the death of her husband. Berriman, a signal fitter, with a ganger named Rowe, was knocked down and killed by a train from Brough to Hull on December 27, 1943, while oiling and cleaning the points at West Parade Junction, Hull.

On behalf of the claimant it was submitted that there was a breach of statutory duty on the part of the railway company in not providing a look-out man as required by the Board of Trade Regulation 9 for the protection of permanent way men.

On behalf of the railway company it was submitted that the regulation referred only to men working on repairs to the per-

manent way, and that the signal apparatus was not a part of the permanent way.

Giving judgment, Mr. Justice Stable said the rule was confined to "men working for the purpose of relaying or repairing the permanent way of such lines." He had come to the conclusion that the permanent way meant that part of the railway undertaking described by the defendants' witnesses, and that the gearing connections from the signal cabin down the lines to the nearest signals and points, although of course an absolutely essential part of the efficient working of the railway, did not form any part of the permanent way. If that view was right, then the statutory rule had no application. He could not find that these men were either repairing or relaying the permanent way. That being so, no question of contributory negligence arose.

On the appeal of Mr. Macaskie, appearing for the claimant, a stay of execution for 21 days was granted.

### Motor Drivers—Meal and Rest Intervals

The decision of the Chairman of the Railway Staff National Tribunal recently has been published on the following claim referred to him by the National Union of Railwaymen:—

"That there be a deletion of paragraphs (a), (b), (c) and (e) from the agreement contained in section 3 of the appendix to R.S.C. and N.U.R. min. No. 736—25.4.35, and the following clause to be substituted:—

'Where a man cannot be entirely relieved of responsibility of the care of his vehicle during intervals which it may be necessary for him to take for rest, meals, or refreshment within his overall hours of duty, payment for such intervals shall be made.'

The claim was presented to the Chairman at a hearing on October 23, 1944, at which Mr. J. Benstead represented the National Union of Railwaymen and Mr. H. J. Comber represented the railway companies and at a further hearing on February 2, 1945, at which Mr. J. B. Figgins represented the National Union of Railwaymen and Mr. H. J. Comber represented the railway companies.

Section 3 of the appendix to R.S.C. and N.U.R. minute No. 736, dated April 25, 1935, which is referred to in the claim, is as follows:—

"3. N.U.R. application for payment as for continuous duty of men not relieved of responsibility during rest period provided under Road Traffic Act, 1930.

#### Proposal

That when drivers are not free from responsibility during the interval for rest and refreshment as prescribed in section 19 of the Road Traffic Act, 1930, they should be paid as for continuous duty.

#### Conclusion

After discussion the following arrangements were recommended for adoption:—

When intervals for rest and refreshment have to be taken under the provisions of the Road Traffic Act, 1930, or subsequent Orders issued by the Ministry of Transport, no payment is to be made when a man is entirely free from responsibility for the care of his vehicle during the intervals.

"When a man cannot be entirely relieved of responsibility during such intervals, the following arrangements are to apply:—

(a) If the intervals which it may be necessary for a man to take for meals and rest and refreshment within his rostered over-all hours of duty on any weekday exceed one hour, payment shall be made for the time by which the total intervals exceed one hour.

(b) In cases where it is the practice for the meal intervals to total 1½ or 1¼ hours, those periods shall be substituted for 'one hour' in the preceding paragraph.

(c) In the case of men working spread-over turns of duty payment will not be made for any portion of the intervals rostered under the spread-over arrangements during which the men are free from duty, but if a further interval is necessitated and the total of the actual intervals within the rostered turn exceeds that of the rostered intervals, such excess shall be paid for.

(d) Any intervals for meals and rest and refreshment outside the rostered hours of duty shall be paid for at the appropriate overtime rate.

(e) In the case of unrostered turns, payment shall be made for the time by which the total intervals for meals and rest and refreshment, within the overall hours of duty, exceed one hour."

It was contended by the National Union of Railwaymen that the provisions of R.S.C. and N.U.R. minute No. 736 and the appendix thereto operate unfairly in so far as the men concerned are compelled to take rest periods as laid down by the Road Traffic Act but remain responsible for their vehicles and loads during such periods; that road motor drivers frequently are obliged to work away from their "home" station and their duties accordingly are for all intents and purposes continuous; that certain grades in the railway service are employed on continuous turns of duty and the position of road motor drivers away from their "home" stations is analogous; that the road motor driver covers a wide area, unlike the horse carter who covers a small area, and consequently is unable to return to his depot for a meal to the extent possible to the horse carter; that it is an accepted principle in railway working that where a man definitely is not relieved from all responsibility he is paid for the time during which he takes an interval for a snack or to attend to physical needs; and that the union's claim, if conceded, would bring road motor drivers into line with certain other grades who have continuous duty by reason of the nature of their employment.

It was contended by the railway companies that there has been no change of circumstances since the Agreement of April 25, 1935, to justify any alteration in the agreement; that under the general conditions of service applicable to railway staff, meal intervals are not paid for; that in the great majority of cases the rest interval under the Road Traffic Act forms part of the meal interval; that in a number of cases the horse carter is obliged to take his meals away from his home depot; that the claim involves the alteration of a principle in connection with payment for meal times which has been accepted since the National Agreement of 1920; that the driver of a road-motor vehicle is in a different position from grades paid for continuous duty; and that the fact that a road motor driver has a limited responsibility for his vehicle during half-hour rest periods is not a sufficient reason for discriminating between him and the main body of railway staff in the matter of payment for meal intervals.

The Chairman found against the claim.

### HOOKS FOR CRANES, CHAINS, AND SLINGS.

—British Standard No. 482-1945, which recently has been revised, deals with three types of shank hooks and five types of eye hooks of trapezoidal and circular cross-section. The previous edition has been extended by the inclusion of a new range of trapezoidal eye hooks suitable for the thimbles of wire rope. Additional figures and tables are included for trapezoidal and circular section hooks with eyes suitable for shackle pins. The specification is obtainable from the British Standards Institution, 28, Victoria Street, S.W.1, price 2s., post free.

## Notes and News

**Sales Engineers Required.**—A large manufacturing firm has vacancies in its Electric Traction Department for two sales engineers. For full particulars see our Official Notices on page 311.

**L.N.E.R. Balance.**—The balances will be struck at the close of business on March 28 for preparing warrants for interest payable on L.N.E.R. 5 per cent. redeemable debenture stock. See Official Notices, page 311.

**Switchgear & Cowans Limited.**—For the year 1944 the net profit of Switchgear & Cowans Limited is £22,632 against £22,653 for 1943. The dividend for the year is at the rate of 20 per cent., the same as for 1943.

**Technical Commissions in H.M. Forces.**—Vacancies exist for two Captains in the Corps of Royal Engineers for general service. One with experience of transmission line construction, and the other in electric railway traction operation. For full particulars see Official Notices on page 311.

**Canadian Pacific Railway.**—Gross earnings of the Canadian Pacific Railway for the month of January, 1945, were \$24,090,000, an increase of \$154,000 in comparison with January, 1944. The working expenses of \$22,428,000 showed an increase of \$1,331,000, leaving net earnings \$1,177,000 lower, at \$1,662,000.

**Bruce Peebles & Co. Ltd.**—The report of Bruce Peebles & Co. Ltd. for the year ended December 31, 1944, states that the profit, after making provision for taxation, war damage insurance and administration expenses, amounts to £42,554 (£39,737). After deducting £20,000 (same) for depreciation reserve there is a balance for the year of £22,554 (£19,737). The dividend recommended on the preference stock, less tax, at 7½ per cent., is £3,830 (same) and a further dividend of 2½ per cent. (making 10 per cent. for the year) £1,277 (same). The dividend on the ordinary stock, less

tax, at 5 per cent. is £8,889 (same) with a bonus of 3 per cent. (making 8 per cent. for the year) £5,334 (same). The amount carried forward is £15,506 (£12,282).

**B.B.C.I.R. and Wireless Telegraphy.**—Dr. H. J. Nichols, General Manager of the Bombay, Baroda & Central India Railway, explaining recently the part played by the Electrical Department of that railway during five years of war, said that a wireless telegraphy branch had been opened, and was expected to expand considerably in the future.

**New Venezuelan Air Lines.**—Aerovias Venezolanas S.A. (Avensa) inaugurated a new passenger and goods air service between Caracas (Maiquetia Airport) and San Fernando de Apure on December 11, 1944. The schedule is for round-trip flights twice weekly. This new service doubles the number of weekly round-trip flights between Maiquetia Airport and San Fernando de Apure, as the Linea Aeropostal Venezolana (L.A.V.) also provides services twice weekly. A new air line called the Linea Aérea Taca de Venezuela was established in Venezuela on August 18, 1944. A new civil aviation law was issued on July 13 last.

**Reconstruction Difficulties in the Engineering Industry.**—Speaking at Cardiff recently, Lord Davidson, president of the Engineering Industries Association, referred to the findings of a survey made by the Association on post-war reconstruction. The survey reveals that before the war about 100 representative engineering firms employed 14,150 people: they now employ 29,013. Their sales for the last financial year totalled over £28,000,000 and profits amounted to £9,895,000 of which £9,125,000 is due for E.P.T., income tax and war damage contributions. Liabilities at the date of the last balance-sheets (including £4,501,000 for taxation) totalled £9,477,000, whereas current assets amounted only to £11,748,000. Lord Davidson pointed out that the change-over from war to peace was particularly

difficult for the engineering industry. It is stated that many companies would be forced out of business if compelled to pay their full tax liabilities.

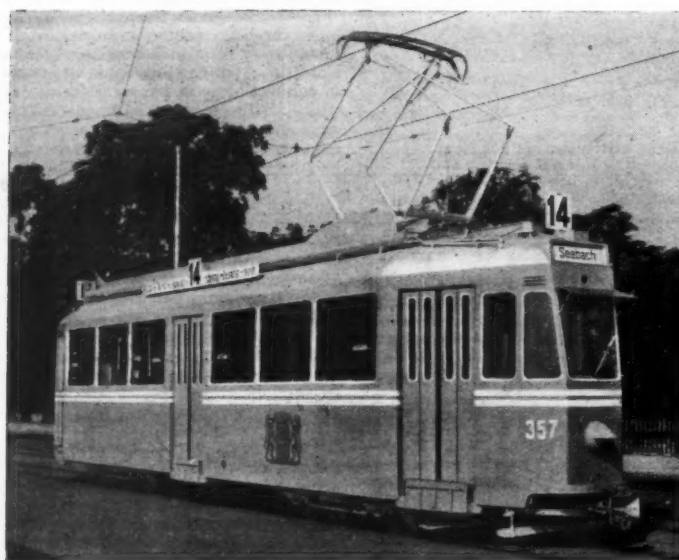
**Spencer (Melksham) Limited.**—The report of Spencer (Melksham) Limited for the year ended September 30, 1944, shows a trading profit, after deductions for taxation, of £28,277 (£25,116). Debenture and loan interest is £5,343 (£5,674), fees £1,269 (£1,441), depreciation £5,000 (same), leaving

## British and Irish Railway Stocks and Shares

Stocks	Highest 1944	Lowest 1944	Prices	
			Mar. 15, 1945	Rise/ Fall
G.W.R.				
Cons. Ord. ...	62½	55	58	— ½
5% Con. Pref. ...	122½	114½	118½	—
5% Red. Pref. (1950) ...	110½	104	105	—
5% Rt. Charge ...	135½	128	134	+ ½
5% Cons. Guar. ...	134½	125	132½	—
4% Deb. ...	118½	112½	116½	—
4½% Deb. ...	118½	114	118½	—
4½% Deb. ...	124½	119½	122½	—
5% Deb. ...	137	129½	136½	—
2½% Deb. ...	77	73½	75½	—
L.M.S.R.				
Ord. ...	34½	27½	29	—
4% Pref. (1923) ...	64½	55½	58½	—
4% Pref. ...	81	72½	76½	—
5% Red. Pref. (1955) ...	105½	102	104	—
4% Guar. ...	107½	99½	103	—
4% Deb. ...	111½	104	108	—
5% Red. Deb. (1952) ...	111	108	109½	+ 1
L.N.E.R.				
5% Pref. Ord. ...	10½	7½	7½	—
Def. Ord. ...	5½	3½	3½	—
4% First Pref. ...	68½	55½	56½	—
4% Second Pref. ...	35½	28½	30½	—
5% Red. Pref. (1955) ...	102½	97½	101	—
4% First Guar. ...	105½	96½	101	—
4% Second Guar. ...	95½	88½	95	—
4% Deb. ...	88½	80½	86	—
3% Deb. ...	110½	103½	106½	—
5% Red. Deb. (1947) ...	105½	101½	102½	—
4½% Sinking Fund Red. Deb. ...	107	104½	104½	—
SOUTHERN				
Pref. Ord. ...	80½	71½	77	—
Def. Ord. ...	26½	23	24½	— ½
5% Pref. ...	122	113½	118½	—
5% Red. Pref. (1964) ...	117½	112½	115½	—
5% Guar. Pref. ...	134	125½	132½	—
5% Red. Guar. Pref. (1957) ...	115½	112½	114½	—
4% Deb. ...	118	110	115½	—
5% Deb. ...	135½	127	135	—
4% Red. Deb. (1962- 67) ...	111½	107½	109½	—
4% Red. Deb. (1970- 80) ...	112	108½	110½	—
FORTH BRIDGE				
4% Deb. ...	107	103	105	—
4% Guar. ...	106½	102	105	—
L.P.T.B.				
4½% "A" ...	125	119	122½	—
5% "A" ...	133½	128	132½	—
3% Guar. (1967-72) ...	99½	98	99	—
5% "B" ...	124½	118½	123½	—
"C" ...	72½	64½	66½	—
MERSEY				
Ord. ...	35½	33	36	—
3% Perp. Pref. ...	72	66	70	—
4% Perp. Deb. ...	105	103	106	—
3% Perp. Deb. ...	85½	79½	84	—
IRELAND*				
BELFAST & C.D.				
Ord. ...	9	6	6½	—
G. NORTHERN				
Ord. ...	33½	19	27½	+ ½
Pref. ...	49	37	43½	—
Guar. ...	70	57½	69	—
Deb. ...	90½	81½	92	—
IRISH TRANSPORT				
Common ...	—	—	70	—
3% Deb. ...	—	—	99	—

\* Latest available quotation

## Zürich "Pay-as-You-Enter" Tram



A "pay-as-you-enter tram" of the Zürich Municipal Tramways. This lightweight car is fitted with the Oerlikon electro-pneumatic system of contactor control



## OFFICIAL NOTICES

**TECHNICAL COMMISSIONS IN H.M. FORCES.**  
Vacancies for two Captains exist in the Corps of Royal Engineers for General Service, with experience as indicated below. Candidates should not be over 45 and should hold a University Degree or equivalent professional qualifications.

- (a) (One) Transmission Line Construction, capable of supervising outside repair work, principally on overhead lines.
- (b) (One) Electric Railway Traction Operation, capable of supervision, maintenance and operation of an electric railway system, from the electrical engineering aspect.

Applicants should write quoting D.1126A to the Ministry of Labour and National Service, Appointments Dept., Central (T. & S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for the necessary forms, which should be returned completed on or before 29th March, 1945.

## London and North Eastern Railway Company

NOTICE is hereby given that, for the purpose of preparing the warrants for Interest payable on the 16th April, 1945, on the Company's 5 per cent. Redeemable Debenture Stock the balance will be struck as at the close of business on 28th March, and such Interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the 5 per cent. Redeemable Debenture Stock should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5 p.m. on 28th March.

By Order,

W. H. JOHNSON,

Secretary of the Company.

Marylebone Station,  
London, N.W.1.  
17th March, 1945.

a net profit of £16,665 (£13,001). £5,750 (£5,250) is transferred to sinking fund. Dividend on the ordinary shares, less tax, at 10 per cent. is £3,441 (same). The payment to co-partnership trust is £794 (£761). The balance carried forward is £30,313 (£23,633).

**L.N.E.R. Wagon-Loading Device.**—The L.N.E.R. is introducing a loading device to enable women goods porters to deal more easily with certain types of traffic, such as grain in sacks. The device is a portable loading board consisting of a wooden platform 3 ft. 8 in. wide which fits across the top of an open goods wagon and has at one end a ramp 2 ft. 3 in. long to enable goods to be loaded direct from road vehicle to rail wagon; at the other end of the loading board a guard rail 2 ft. 6 in. high is provided as a safety measure. The whole outfit is in four sections, weighs less than 2 cwt. all told and can be raised or lowered to the required level: the heaviest section weighs little more than 1 cwt. Recent experiments carried out by the L.N.E.R. with this device have shown that a woman can load 2 cwt. sacks of grain and stack them several tiers high in a wagon with comparative ease. Without the loading board women could not load wagons to full capacity, and so the new device will not only help women goods porters but facilitate better wagon loading. Two hun-

dred of these loading boards are being made by the L.N.E.R.

**British Thomson-Houston Co. Ltd.**—For the year 1944 the net profit of British Thomson-Houston Co. Ltd., after providing for taxation, was £596,527 (£580,362). Provision for depreciation was £228,975 (£226,435) and £150,000 (same) was added to general reserve. The dividend on the ordinary shares is 7 per cent. (same), less tax, for the year, and £255,704 (£248,368) is carried forward.

**American Railway Equipment Production in 1944.**—Figures released by the Office of Defense Transportation of the United States show that the production of rolling stock and equipment for the railways, despite military demands, was substantially heavier in 1944 than in 1943. A total of 963 locomotives was supplied in the former year, as compared with 830 in the latter; wagons built increased from 28,790 to 42,810 in the year, and of steel rails the railways obtained 1,900,000 tons as compared with 1,540,000 tons. In addition 939 troop sleeping cars and kitchen cars were built in 1944, whereas no passenger rolling stock was turned out in 1943. Of the 1944 construction, no fewer than 125 locomotives were the large quadruple-unit diesel-electric road freight locomotives of 5,400 b.h.p., 496 were smaller diesel shunt-

ing and transfer locomotives, and 23 were diesel-electric road locomotives of other types; the remaining 319 of the total were steam locomotives. The 125 road freight locomotives alone represent an investment of about \$62,500,000. Diesel-electric power thus represented 67 per cent., or almost exactly two-thirds, of the total locomotive construction. Of the 42,810 wagons built in 1944, the whole were high capacity bogie wagons, as is customary in American practice; 20,038 were box wagons and the remaining 22,772 were of other types. In addition, builders supplied the railways with marine and water transport equipment to the extent of 1 tug, 15 floats for train-ferries, and 11 lighters and scows.

**Argentine Railways and Fuel Problem.**—It is reported that the Buenos Ayres Great Southern and Buenos Ayres Western Railways have sent a letter to the National Railway Department drawing attention to the serious consequences feared from a proposed 25 per cent. reduction in the quota of fuel oil. The letter states that 800,000 tons of goods are awaiting transport, compared with 85,000 tons a year ago; consequently it will not be possible to provide even one-tenth of the transport required by producers in the zones served. The companies state that they have already informed the Argentine State Oilfields Administration that they cannot accept responsibility if fuel supplies are inadequate. The fuel problem in Argentina is reported to be becoming steadily worse. Petroleum imports are small and Argentine petroleum production is falling through lack of imports of drilling machinery.

**Second Tube of New York Vehicular Tunnel Opened.**—The north tube of the Lincoln Tunnel under the Hudson River at New York was opened to traffic on February 1. Hereafter, the south tube, which was opened in December, 1937, for two-way traffic, will be used for eastbound travel and the new tube will carry westbound traffic. Each tube is 31 ft. in external diameter and carries a two-lane 21 ft. 6 in. roadway. The north tube is 7,482 ft. long and the south tube 8,217 ft. Each has an under-river section 4,600 ft. The entrance plaza of the north tube lies between 10th and 11th Avenues and 39th and 40th Streets. The south tube continues under 39th Street to a point east of 10th Avenue. Tolls are collected at the New Jersey end, where the two tubes have a common plaza. The plaza of the new tube comes to street level on the deck built over the depressed right-of-way for the New York Central Railroad West Side freight line. It is proposed to deck over this right-of-way cut as far north as 42nd Street and south to 34th Street, thus forming a new access street.

## L.N.E.R. Wagon-Loading Device



A woman goods porter using the loading board (see paragraph above)

## Railway Stock Market

Only a moderate volume of business has been passing in stock markets, but although there was little fresh buying, selling was equally small, with the undertone firm under the lead of British Funds. The latter continued to strengthen in response to prevailing views of the likely terms of the expected forthcoming conversion operation in respect of Australian 5 per cent. stocks. Industrial shares were again steady, reflecting confident hopes as to post-war prospects. European bonds attracted speculative attention, while elsewhere, French railway bonds were again favoured and moved higher in price. There was more business reported in Mexican railway securities, which showed further gains, where changed.

Argentine Rails displayed moderate fluctuations, and earlier gains were not held; a rise on hopeful market views of the post-war outlook has been followed by a reaction when sentiment was influenced by the official statement on the seriousness of the fuel situation. Ordinary stocks of the leading Argentine railways, all points considered, must be regarded as carrying a good deal of speculative risk. Nevertheless, according to some market opinions, they may have interesting possibilities of capital appreciation over a period, and better scope for the future than many of the small-priced European bonds which are attracting attention at the present time. The end of the European war will not, of course, bring an early resumption of ordinary dividends by the Argentine railways. Nevertheless, it should mean an easing of some of the problems facing the railways, particularly

as in due course the Argentine should be able to play an important part in supplying goods essential to the rehabilitation of Europe. It may be that although the railways will be active in the post-war period, there will be no possibility of resumption of dividends on ordinary stocks until the railways receive fair treatment from the authorities and adequate concessions in respect of exchange. Meanwhile, debenture stocks of the Argentine companies offer either attractive yields or the possibility of interest arrears payments in due course, combined with scope for satisfactory appreciation in price. This is, however, generally realised, which accounts for the fact that in many cases the debentures are firmly held and consequently usually in rather small supply in the market.

After remaining idle with prices continuing to ease, home railway junior stocks firmed up, due partly to the surrounding trend on the Stock Exchange, but partly to the Government's air proposals. The latter were generally well received. They recognise the right of the railways to play an important part in the development of civil aviation. Nevertheless, in any case it will probably be some considerable time before the interest of the railways in civil aviation brings any material benefit to their earnings.

After a decline to 58, Great Western ordinary rallied to 58½ and was unchanged on balance. On the other hand, Great Western 5 per cent. preference at 118, and the guaranteed stock at 132 were fractionally lower than a week ago, and the 4 per cent. debentures eased to 116. L.M.S.R. fell to 29, later showing a partial rally to 29½, which compared with 29½ a week

ago. The senior preference receded from 77 to 76½, the 1923 preference from 59 to 58½, and the 4 per cent. guaranteed stock was slightly lower at 102½.

L.N.E.R. second preference was 30½, compared with 30½ a week ago, and the first preference 56½, compared with 57½; the first guaranteed at 101 was fractionally lower, but the second guaranteed remained at 95. Southern deferred was ½ down at 24½; the preferred ordinary was maintained at 76½; the 5 per cent. preference, however, was 117½, as against 118½ a week ago; the 4 per cent. debentures remained at 115½. London Transport "C" moved back from 66 to 65½. Yield on the latter is considerably below yields on the junior stocks of the main-line companies, reflecting hopes of better dividends after the war when control is ended, although this may be a gradual process, particularly as the L.P.T.B. has to bear exceptional charges for certain revenue expenditure arising out of the war and not chargeable to the control agreement. This, it may be recalled, was disclosed in 1943, when it was considered expedient that £750,000 arising from the rating settlement should be set aside as provision against possible war liabilities.

Among Argentine rails, Buenos Ayres Great Southern reacted from 11½ to 11½, although the 4 per cent. debentures gained a point at 63½, later receding to 62½, and various other debentures were slightly better on balance, including Buenos Ayres Western 4 per cent. at 54½, but Central Argentine 5 per cent. were ½ down at 62. Antofagasta preference rose to 39, it was pointed out that a large part of the price is represented by outstanding arrears of dividend.

### Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Weeks	Aggregate traffic to date			Shares or Stock	Prices			
			Total this year	Inc. or dec. compared with 1942/3		Totals		Increase or decrease		Highest 1944	Lowest 1944	March 15, 1945	Yield % (See Notes)
						1943/4	1942/3						
South & Central America													
Antofagasta (Chili) & Bolivia	834	11.3.45	£ 31,500	+ £ 6,900	10	£ 312,200	£ 292,500	+ £ 19,700	Ord. Stk.	13½	9½	10	Nil
Argentine North Eastern	753	10.3.45	20,920	+ 5,574	36	713,793	583,62	+ 130,173	"	6½	4½	7	Nil
Bolivar	174	Feb., 1945	4,995	- 263	8	—	—	—	6 p.c. Deb.	18½	7½	7½	Nil
Brazil	—	—	—	—	—	—	—	—	Bonds	19½	15	21	Nil
Buenos Ayres & Pacific	2,773	10.3.45	176,000	+ 34,466	36	5,097,934	8,187,134	+ 910,800	Ord. Stk.	7½	3½	5½	Nil
Buenos Ayres Great Southern	5,080	10.3.45	261,866	+ 15,800	36	7,936,533	7,283,800	+ 652,733	Ord. Stk.	14½	9½	11½	Nil
Buenos Ayres Western	1,924	10.3.45	79,800	+ 8,466	36	2,718,067	2,253,534	+ 464,533	"	13½	9½	10½	Nil
Central Argentine	3,700	10.3.45	209,153	+ 19,846	36	6,953,203	6,042,546	+ 910,657	"	10½	6½	8½	Nil
Do.	—	—	—	—	—	—	—	—	Dfd.	—	—	—	Nil
Cent. Uruguay of M. Video	972	10.3.45	35,654	+ 4,323	36	1,219,398	1,240,616	+ 21,218	Ord. Stk.	5½	4½	4½	Nil
Costa Rica	262	Jan., 1945	25,556	+ 2,891	30	146,887	152,859	+ 5,972	Stk.	17½	14½	16	Nil
Dorada	70	Feb., 1945	26, 77	+ 5,005	8	58,605	47,692	+ 10,913	1 Mt. Deb.	101	101	98½	66 1/10
Entre Rios	808	10.3.45	25,653	+ 7,867	36	950,746	803,686	+ 147,060	Ord. Stk.	6½	4½	5½	Nil
Great Western of Brazil	1,030	10.3.45	26,900	+ 2,900	10	278,800	242,000	+ 36,800	Ord. Sh.	38/-	23/3	26/3	Nil
International of C. Amer.	794	Jan., 1945	\$185,167	+ \$25,877	1	\$185,167	\$211,044	+ \$25,877	—	—	—	—	Nil
Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	13	1	1	Nil
La Guaira & Caracas	223	Feb., 1945	5,023	- 2,592	8	10,517	14,255	- 3,738	5 p.c. Deb.	88	79	78½	66 7/5
Leopoldina	1,918	10.3.45	42,446	+ 1,198	10	451,692	430,368	+ 21,324	Ord. Stk.	5½	4½	4	Nil
Mexican	483	7.3.45	ps. 509,900	+ ps. 101,200	10	ps. 5,582,500	ps. 3,898,400	+ ps. 1,684,100	Ord. Stk.	4	1	1	Nil
Midland Uruguay	319	Dec., 1944	15,817	- 3,197	26	99,688	103,465	+ 3,777	—	—	—	—	Nil
Nitrate	382	28.2.45	5,133	- 6,107	8	22,202	38,370	- 16,168	Ord. Sh.	75/10	65/10	71/3	£3 10/2
Paraguay Central	274	9.3.45	\$65,507	+ \$16,615	36	\$2,131,023	\$1,844,687	+ \$286,336	Pr. Li. Stk.	79	68	77½	£7 14/9
Peruvian Corporation	1,059	Jan., 1945	145,653	+ 34,209	30	914,951	748,631	+ 166,320	Pref.	9	10	9½	Nil
Salvador	100	Jan., 1945	c 193,000	—	30	c 751,000	c 796,000	+ c 45,000	—	—	—	—	Nil
San Paulo	153	Feb., 1945	2,085	- 2,475	34	20,045	45,270	- 25,225	Ord. Stk.	57½	46	55	£3 12/9
Taitai	156	10.3.45	72,090	+ 5,596	36	1,860,784	1,894,987	+ 34,203	Ord. Sh.	21/3	13/9	12/6	Nil
United of Havana	1,301	10.3.45	1,568	- 17	26	8,892	8,716	+ 176	—	—	—	—	Nil
Uruguay Northern	73	Dec., 1944	—	—	—	—	—	—	—	—	—	—	Nil
Canada													
Canadian Pacific	17,028	7.3.45	1,115,200	- 29,600	9	10,565,000	10,690,400	- 125,400	Ord. Stk.	17½	13½	15½	£3 4½
India													
Barai Light	202	Feb., 1945	20,220	- 4,467	44	243,080	237,600	+ 5,480	Ord. Stk.	129½	97½	127½	£3 10/7
Various													
Egyptian Delta	607	20.2.45	195,282	- 252	47	612,455	524,093	+ 88,362	Pr. Sh.	7½	5½	7	Nil
Manila	277	Jan., 1945	19,645	- 7,632	31	139,946	223,920	- 83,974	B. Deb.	63½	58	62½	Nil
Midland of W. Australia	1,900	25.11.44	374,576	- 59,634	4	40,796,736	36,963,117	+ 3,833,619	Inc. Deb.	101½	99½	96½	£42 1/1
Nigeria	13,301	3.2.45	1,042,633	+ 135,843	44	—	—	—	—	—	—	—	Nil
South Africa	4,774	April, 1944	1,188,999	- 212,162	—	—	—	—	—	—	—	—	Nil
Victoria	—	—	—	—	—	—	—	—	—	—	—	—	Nil

Note. Yields are based on the approximate current price and are within a fraction of ½. Argentine traffic is given in sterling calculated @ 15 pesos to the £

† Receipts are calculated @ 1s. 6d. to the rupee